DOCUMENT RESUME

ED 079 178 SO 005 839

AUTHOR	Ojansuu, Raila, Ed.
TITLE	Comprehensive School in Finland. Goals and an Outline for a Curriculum.
INSTITUTION	Ministry of Education, Helsinki (Finland).
PUB DATE	71
NOTE	123p.
EDRS PRICE	MF-$0.65 HC-$6.58
DESCRIPTORS	*Comparative Education; *Comprehensive Programs; *Curriculum Development; Curriculum Planning; *Educational Objectives; Educational Philosophy; Elementary Grades; Foreign Countries; Integrated Curriculum; Intermediate Grades; Program Evaluation; Secondary Grades
IDENTIFIERS	Educational Systems; *Finland

ABSTRACT

This publication contains two chapters of the final report of the Curriculum Committee published in 1970 as an evaluation of goals and curriculum of the comprehensive school in Finland. The comprehensive school aims at providing the children with material and stimuli that favor a positive personality development. The major domains of an integrated curriculum are defined: (1) educational aspects of human biology; (2) cognitive education; (3) ethical and social education; (4) religious education; (5) aesthetic education; (6) development of practical skills; and (7) supporting personality integration and maintaining mental health. (SHM)

ED 079178

SP005839

Reference Publications 5
MINISTRY OF EDUCATION
HELSINKI 1971

Comprehensive School in FINLAND

Goals and an Outline for a Curriculum

FILMED FROM BEST AVAILABLE COPY

ED 079178

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Comprehensive School

in

FINLAND

Goals and an Outline for a Curriculum

Edited by Raila Ojansuu

SP005839

HELSINKI 1971

This book is based on Chapters II and IV of the Report
of the Curriculum Committee

MUNKKINIEMEN KOPIOLAITOS
1971

CONTENTS

INTRODUCTION 1

GOALS OF SCHOOL EDUCATION

Problems related to defining the goals 9
General aims of the comprehensive school 17
Educational aspects of human biology 19
Cognitive development 23
Ethical and social goals of education 45
Goals of religious education 55
Goals of aesthetic education 59
Development of manual work and practical skills 66
Integration of personality and promoting mental health 70

PROPOSAL FOR AN INTEGRATED CURRICULUM

The main domains 85
Curriculum for grades I–II 86
Curriculum for grades III–IV 98
Curriculum for the upper grades of the comprehensive school 109

INTRODUCTION

When the Comprehensive School Act was given in 1970, it was a final blow to a time-honoured tradition. Through centuries there had existed two mainly parallel systems, a primary and a secondary school. Besides the three R's the former provided the people with general education, whereas the latter paved the way for advanced learning, e.g. university studies. Compulsory Education Act came into force in 1921. Up to now compulsory education has covered eight years. This means either six years in the primary and two years in the civic school, or alternatively four years in the primary and a transfer to a five or six years junior high. Judged with European standard school attendance in Finland has been relatively high, around 87 per cent in 1937, and close to a hundred in 1965.

The civic school intends to give the basis for vocational studies, but in recent times it has become a cul-de-sac for higher theoretical studies. Developing the school has been a Penelope's web in Finland, and trends towards integrating the systems have existed since the previous century. When we

look for prerequisites of a concrete change we notice a shift in the general intellectual atmosphere in the 1960's and a willingness to correct what has been experienced as socially unfair. The present reform aims at giving each child a chance to attend a uniform and free nine year municipal school with equal social opportunities for all, independent of one's place of residence or economic background. The school authorities as well as the general public, well posted up in the question, do sincerely hope that this will not be only a castle in the air, but a true reform.

But how to evaluate the reform? What would be the criteria? When something is planned it is generally done for some purpose. School planning involves a more or less clear awareness of goals. In 1966 a committee was appointed by the Government to formulate the general goals and to derive the subgoals from these. First a temporary curriculum was created; later it was substituted with a more detailed one. It will be a future task to compare the processes taking place at school with what has been perceived as goals.

The experts that were to provide the committee members with relevant feedback ranked high in number. A total of 54 representatives of various fields were asked to contribute with their opinions and views about the goals and the curriculum. The final report of the Curriculum Committee was published in 1970, and it comprised two extensive volumes. Preliminary experimentation with the comprehensive school had begun as early as in 1960, and various committees had been appointed to deal with problems of administration and other questions related to the reform. A systematic experimentation started in 1967.

It is far from easy to be explicit about the values behind human actions and become conscious of the values of the society one is a member of. Democracy and equality of opportunity are not infrequently referred to in present-day discussions and in the connection of the educational reform. The meaning of the concepts may depend on the situation and on the individual speaker. An abundant use of a word tends to lead to semantic satiation: the general meaning of the concept becomes overshadowed by its connotative or affective components. But we have no reason to doubt that there is a true desire to promote democracy at school whatever the individual interpretation of the concept may be. Whether democracy and equality of opportunity are incompatible goals is a matter of dispute and dependent on the interpretation of the concepts.

School is for the human being. The central aim of the comprehensive school is to promote developmental processes that favour a balanced growth of an integrated personality. Thus the criteria of the comprehensive school can be perceived both as behavioral and phenomenological. We should aim at a meaningful interaction between man and his environment, biological as well as social, allow for a purposeful adjustment to life, and let the young develop a capacity to cope with problems they will face. What is required in particular of man to-day, and in the decades to come, is recognition of the consequences of one's behaviour – to the extent it is possible for man – and learning to take responsibility of one's actions. There is hardly any one to doubt that the child's experiences at school are of a paramount importance for his later life. To be conscious of

this is a challenge to all who stand for the emotional and intellectual atmosphere in the comprehensive school.

School is for meaningful learning, and the child is the center of this process. As it would be of a hybris to claim that we know what future will be like, school and the curriculum ought to be flexible enough to meet the demands of a changing time. Though there may be both Scylla and Charybdis to encounter, there is reason to look forward to a positive development in the implementation of the reform.

School is part of the society we live in, and the education children obtain at school moulds their world view. School transmits to the children various ways of perceiving the environment and categorizing the phenomena around him. In a world of increasing intercultural contacts knowledge about other people's ways of perceiving will be of great help if we want to avoid misunderstanding of the aims of human beings who have grown up in a cultural setting differring from our own in thinking and traditions. Familiarity with the aims of education may open a window for looking at the strivings in the educational field of a country. A verbal description of the aims has its limitations though: in general, there is no full correspondence between words and behavior. In addition, what we strive at in the emotional and social field in particular cannot easily be pinned down in verbal categories. Nevertheless, an explicit statement about the goals of education is worth while doing. Acquintance with these goals may allow an international reader to get a glimpse of the educational thinking in the present-day Finland.

This book contains two chapters of the Report of the Curriculum Committee. The first presents the goals of the

comprehensive school, and the second an outline for a curriculum; these chapters have been thought of to be of international interest. A lector benevolens should thus be able to get an overall view of the goals and the curriculum without being lead to an adventure in the jungle of educational details.

GOALS OF SCHOOL EDUCATION

PROBLEMS RELATED TO DEFINING THE GOALS

Before discussing the objectives of school work it may be worth while to reflect upon the following question: *how are the objectives defined by the Curriculum Committee related to the educational aims in general?*

We agree that the comprehensive school is a social institution. This means that in considering the objectives of its activities a great number of different factors must be taken into account. We may succeed in our attempt to look at it from a wide angle and we may be fortunate to balance the various factors, but nevertheless a written statement about the objectives of a curriculum can hardly be formulated in a manner which would be accepted without reservation by all the social groups and by every single teacher, pupil and parent. In defining the goals the Curriculum Committee started from the general aims of school education which have been expressed in the law in a general form. In the present report the goals have been elaborated further, and they have been stated in a more precise form. School planning cannot be based on present-day needs only; future demands must be

taken into account. But here we face a problem: there is little agreement of opinion about how the society will develop before let us say year 2000, or what kind of society we should strive at.

In defining the educational goals we must keep in mind that school is not the only environmental factor which exerts its influence on the child. That is why it would be important to create meaningful *interaction between school and society.* Also, we ought to find a way to divide the activities within the school system so that an optimal functioning of the units would be reached. As far as the comprehensive school is concerned this means that we have to make clear what are *the particular objectives of the basic education*, and what can and should be attributed to further education. *An eventual incompatibility* of the educational goals poses a problem. This is particularly serious if the clash of opinion takes place between the teacher and the parents. The teachers may also differ in their objectives which can have either a negative or a positive effect on the child. In addition to teachers, pupils, parents, and national committees, there may be others, such as municipalities and local societies, who want to express their ideas about educational goals. Ideological and interest groups have their own desires about the direction of the child's development at school. Pressure exerted by the different groups may bring about bias in establishing the goals which, in turn, may result in a disharmonious development of the pupil. The various interest groups may also share different opinions about certain points in the curriculum, e.g. about the material to be learned, or they may have requirements which would, if fulfilled, lead to an unbalanced expansion of the curriculum.

The Committee is well aware of the fact that it does not represent all the different sectors of the society, and this is why nonmembers with different views have been asked to express their opinions about the goals. Attempts have been made to take these views into consideration.

The relation between explicitly stated objectives and factual underlying goals is far from clear: some interest groups state explicitly that their objective is to promote what is beneficial for the child, but in fact they may not primarily be concerned with the common good but with promoting what is favourable for the particular group in question. An outsider making observations in a class may notice that the teacher's activities do not always correspond to what she has claimed to be her aim. We should strive at making all those involved in the process of education grow conscious of their objectives, which would allow for a deliberate reflection upon the goals and promote correcting the direction of one's activities, if necessary.

The educational goals of those involved are not independent of each other. Discussing the objectives often reveals a desire to influence the opinion of others. Then compromises become necessary. At school the teacher can, to a certain extent, pay attention to the wishes of the parents.

How to *take into consideration* and develop the *goals of the pupils* poses a set of questions. In principle every individual of a democratic society should be free to set his or her goals. But when are the pupils mature enough to set their own goals? The answer to this question depends on what kind of goals we are talking about. Adopting *distant goals*,i.e. general objectives of education, requires information and

experience far beyond that of lower grade children in the comprehensive school. They are not familiar enough with the society and they lack experience of the different spheres of culture and knowledge, and moreover, they cannot have acquired knowledge relevant for adopting goals for personality development. The educators should strive at such decisions about goals which those concerned can accept even later. In defining more *immediate goals,* e.g. planning working methods and curriculum for a fixed period of time, the elementary level children can come with their own suggestions, and these can be taken into account as far as possible. With increasing age the pupils should participate more and more in decision making. The younger ones can make choices from a given set of alternatives, the older ones decisions with far-reaching and irreversible consequences. In this way the pupils learn to take responsibility of goal-directed activities.

Stating objectives in a written form when the school system is subject to reform creates some problems. A curriculum presented during the reform must be detailed enough to show the direction of the school work. In an ideal situation there are always possibilities for choice. What is crucial here, is that whatever the activities will be, they should be in harmony with the general objectices. Thus there is a door open for creative activity. Realization of a plan involves always redefinition of objectives. or at least shifts in emphasis and adaptation of goals in different subjects; a curriculum presented in a written form need not be final either. There must be possibilities for change if the situation calls for it.

CURRICULUM AND BACKGROUND FACTORS

The previous discussion has probably made it clear that adopting goals for school work implies taking into account *the capacities of the pupils*, and besides, various *social and cultural factors, and the material to be learned*. Abundance of views and learning material calls for meaningful selection. Selection of goals is ultimately a problem of values. It is not difficult to point out that there are certain values which are commonly accepted within our culture. It is expected that school encourages the pupils to be responsible and not to neglect their tasks, to be honest, and to avoid uncritical acceptance of ideas heard or written, etc. Defining the objectives of a curriculum implies necessarily consideration of central value problems, such as the *relation between the individual and the society*. The Committee accepted the view that the pupil is neither to be an instrument nor an object of manipulation of outside forces, but the subject of the educational process. The child should grow to a responsible citizen of his country and a member of mankind.

A value problem evoking a lively debate was related to the relative weight to be given to acquiring knowledge about the cultural tradition vs. developing it further. It is natural that the basic education starts from transferring parts of the traditional heritage, but it is also a necessity that the learning process allows for possibilities and creates a desire in the pupil to add something new to the cultural heritage.

CURRICULUM AND THE DISPLAY OF GOALS

The problem is not that of literary formulation. It is a more practical one, closely related to the teacher's work: what is the function of the objectives in the curriculum?

Objectives are referred to in planning teaching activities, e.g. in selecting and arranging learning material or equipment, and in making decisions in the classroom, and in rating achievement. Evaluating success in choice of methods, or in rating results, imply taking into consideration the goals. It is not reasonable to think of the teacher's or pupils' achievements to be good or bad as such. If goals are used as criteria in planning and evaluating school work they must be accompanied by a wide interpretation; judging on the basis of a sporadic criterium would just be a haphazard.

It is not a negligible amount of capital that is invested in education by the society. Thus, a demand for social control of the results obtained at school is natural. This implies, in turn, that school and teachers in particular ought to know what should be achieved.

The objectives are good criteria of teaching if they are expressed in a form clear enough to allow for an unambiguous interpretation. A description of a course and a statement of objectives are, however, two separate things. Distant goals expressed in general terms should be split into concrete *subgoals which can be described referring to relevant patterns of behaviour and achievements of pupils.* It is important to notice that establishing goals does not mean programming for a uniform development for all. In a number of cases alternative goals must be accepted.

Specification of goals implies stating the circumstances relevant in each case, e.g. instruments which the pupil is supposed to make use of, to reach the goal. Precise statement of goals includes also, when possible, information about the required level of achievement.

The classroom behaviour of students and teachers can be evaluated using observation techniques. As instruments they are not as refined as achievement tests. Creating and developing valid tests and observation methods imply a minute analysis of goals.

Documents dealing with curricula often present the objectives of school work in the form of systems which give the framework for stating the relation between different categories of objectives. Compared to a list, a hierarchical scheme is easier to manage in evaluating the goal structure and in planning school work. The present report lists the main objectives in a successive order trying not to neglect to refer to their interim relations.

Defining the objectives must comprise an explicit statement about the subgoals at the different levels of the comprehensive school. The general objectives given by the Curriculum Committee include a guideline for differentiation. Present-day views about child development have been taken as the basis.

Progress in the various fields of learning will be accompanied by an increased level of "difficulty" of goals, and a shift in emphasis is supposed to take place along the following lines:

The elementary level of the comprehensive school concentrates on promoting the learning capacities and the

emotional life of the children. The middle stage will focus on socialization and acquiring knowledge, and at the advanced level the principal aim is to make the students grow into full membership of the society; creating one's own world of values and developing one's personal interests will be encouraged.

The Committee has ended up in describing the objectives in the form of *developmental processes* aimed at as *a result of a meaningful interaction between the individual and the various social groups and different sectors of culture.*

GENERAL AIMS OF THE COMPREHENSIVE SCHOOL

School should above all provide material and stimuli for an *individual development of a harmonious personality.* The individual and the unique characteristics of a growing human being should be taken into account within the general framework. These days the mass media and dense nets of transportation bring us in close contact with people of remote countries. Industrialization and increased level of material culture has become associated with a threat that the globe, and the mankind with it, may become destroyed. *Responsibility which was earlier confined to one's family and fellow citizens extends now to the whole mankind.* A technocratic world calls for democracy and humanism. We are to favour personality development which leads towards appreciating these values in the society.

The comprehensive school is supposed to stimulate the development of the young by bringing them in contact with the essentials of culture and creating opportunities for a fruitful social interaction in the school environment.

A set of objectives, established and implemented, should be balanced enough to allow for *a harmonious growth, good*

health and development of all sectors of the young personality. Educational situations concentrating on distributing knowledge, skill and information about social adjustment, should be balanced through giving opportunities for creative activity and by providing a variety of experience necessary for a harmonious development.

Play is a 'natural method' for promoting creative activity, biological growth and the development of various aspects of human personality. To be active is a characteristic of a child. This activity finds its outlet in plays, sudden ideas, curiosity and experimentation. There is a biological wisdom in this behaviour: besides promoting development it yields opportunities for practicing activities necessary for adaptation. Acting out and satisfying the basic biological needs favour socialization of the young and promote learning. Work and play are not to be taken as opposites: proliferation of energy on play can serve as a stimulus for school work. Scholastic activity with elements of play promotes true interest in what is being learned.

A more detailed discussion of the objectives of the comprehensive school will cover the following domains:

- Biological factors to be taken into account in education
- Cognitive development
- Ethical and social objectives of education
- Goals of religious education
- Aesthetic education
- Objectives related to manual work and practical skills
- Promotion of integration of personality and mental health.

EDUCATIONAL ASPECTS OF HUMAN BIOLOGY

VITAL BIOLOGICAL NEEDS

The objectives of school work can be traced back to *the relation between the individual and his environment* – which includes besides arts and science, work in all its forms, and social activities – *and the human biological needs.* A multiplicity of links connect these areas. Maintaining a balance between these factors can be included in the objectives. Increased social demand, requirements of the labour market and cultural needs cannot be the only factors to determine the educational objectives. Prerequisites of growth and development as well as biological needs cannot be neglected at school: they are the basis for attaining social and cultural goals.

Concern for biological needs and prerequisites of a harmonious development are matters of importance particularly in an industrialized and urbanized society where the so-called diseases of affluence and civilization are concomitants of increased emotional stress, tension and anxiety.

Mind and body are one. Physical, social, intellectual and emotional components of growth and development are in a continous interaction. The organism is a whole: a biological dysfunction is often accompanied by a disturbance in social adjustment. Disturbance in one area is easily reflected in other areas of development. Anxiety and various painful emotional states can hinder biological development and sometimes bring about unbalanced growth. The level of a child's motor skills can be a factor affecting his self-reliance and experiences of personal adequacy.

School subjects which activate a whole spectrum of personality components are of a particular value for the development of mind and body. Physical education, handicraft and art subjects have a special position as they allow for a simultaneous training of the physical, motor, intellectual, emotional and social aspects of personality. These processes come close to the most natural and balanced of activities, i.e. the play. *The whole curriculum – and not only a couple of subjects and lectures – should be planned to favour the development of the biological organism and the total personality.*

INDIVIDUAL DIFFERENCES IN BIOLOGICAL DEVELOPMENT

The course of human biological development shows general regularities as well as individual variation. Biological differences can already be noticed in elementary level

children. Promoting favourable development requires attention to and acceptance of these differences. This can be done at school by proper manipulation of the environment. The different size of pupils can be taken into account, e.g. by arranging the working space, the desk and the chair accordingly, and in providing for appropriate activity in physical education.

The child is a biological organism with an integrated system of self-control. Forcing an organism to an unnatural activity can be harmful. Food intake at school e.g. must often be restricted, for practical reasons, to certain hours – which generally does not lead to complications – but there is no need e.g. to compel the children to take uniform quantities of food.

A subtle question to be taken into consideration at the medium and advanced levels of the comprehensive school is the individual variation in sexual development. Personal experiences in this domain are new and often accompanied by feelings of insecurity. A number of social and psychological factors are associated with variations in sexual development. Deviation from the rhythm of one's class mates, early or late maturation, can become a source of unpleasant experience. The teacher can promote adjustment by proper attitudes and delicate measures. School must also provide information about the biological basis of sexual maturation and behavior as well as of the social and moral questions involved. Careful consideration is required in guidance and in maintaining order in situations which might have their origin in sexual interest. Evoking unnatural feelings of shame and guilt should be avoided, and developing natural and responsible attitudes

towards sexual problems should be encouraged. Family education which starts at the elementary levels of the comprehensive school is planned to serve similar aims.

School should always take into account the requirements of a balanced mental and physical growth. The pupils should acquire knowledge, skill and attitudes which create a basis for *continuous recreational motor activities, care of personal health and a responsibility for the biological conditions of one's environment.*

It is the responsibility of the school to take care of the health of the pupils. To be succesful, this activity requires co-operation between the staff and the authorities of medical, psychological and social care. School should provide for appropriate illumination, heating, ventilation and sanitation. By and large, the way in which school work and leisure are organized, and the nature of the psychological climate are factors influencing the health of the pupils.

COGNITIVE DEVELOPMENT

EVERYDAY EXPERIENCE AND SYSTEMATIC ACQUISITION OF KNOWLEDGE

Acquiring knowledge is a process which leads to making observations about new phenomena. Perceiving the results of one's own actions is an important element of knowledge acquisition in everyday life: the human being tries several alternatives in order to see the consequences. A more complicated acquisition of knowledge requires thinking. It is possible to try out different alternatives merely on the cognitive level. Then it is possible to make use of observations to find out how well the hypotheses correspond with the reality. The human being strives at generalizations, and looks for regularities in his environment and in different processes. A systematic acquiring of knowledge, which we call science, is based on observation, activity and thinking. Scientific inquiry is characterized by a systematic acquisition of information, precise and confirmed knowledge, and creation of large and integrated systems. There is no difference in principle between knowledge obtained through everyday experience and scien-

tific knowledge, the difference is only a quantitative one, though on several dimensions. In addition to scientific knowledge we can have information about single cases, or immediate experience. Both are valuable because general information can be applied only if we know the characteristics of single cases. This is why "practical experience" is appreciated in the society.

MATERIAL AND FORMAL GOALS

Maintaining a civilization and developing it further imply that the young generation becomes familiar with the essence of the cultural heritage. These days we think that it is the right of every citizen to have his share of the common accumulated knowledge. Without the idea of cultural heritage the concept of humanity would be an empty word.

The human being applies knowledge in order to adjust to the environment, but also for changing it. Success in these activities requires attention to both the *material* and the *formal* aspects of knowledge acquisition. The former is related to content, to facts and relations between them, and larger contexts. In short, the formal goals include training of thinking, i.e. concept formation with applications, deduction, evaluation of knowledge, problem solving and creative thinking.

The material and formal goals are intertwined. Thinking is based on contents which we generally take from the memory storage. Memorizing isolated facts is not sufficient. To

facilitate keeping things in mind we create integrated structures. If an individual has learned to master various types of knowledge, and knows how the facts have been acquired, learning of new material is experienced to be easy. Solving of problems presupposes a certain amount of knowledge.

Nowadays the goals of the school include making the students familiar with study techniques which allow for quick and reliable acquiring of knowledge, and methods of application. Practicing of these techniques can take place in normal learning situations using various material. Making the training of techniques artificial or an aim *per se* should be avoided.

The Finnish school has been critisized of an overemphasis on the material aspects of learning. Results of international school achievement tests, carried out in the 1960's, are in accordance with it. There are several reasons why school should aim at taking into account the formal aspects better than before.

The amount of information a human being is exposed to daily is enormous, and it is impossible to master it by relying only on rote memory. Sometimes it is also difficult to integrate the material and create meaningful systems. We can, however, make use of the present-day technical equipment which allows in principle the storing of an unlimited amount of information. Future education should train people to make use of this kind of equipment in a meaningful way and focus on methods of acquiring information in general. The human being seems to become less and less dependent on his rote memory.

A growing individual should learn to understand that e.g.

propaganda often aims at distributing distorted or even false information. One has to learn to distinguish between beliefs and knowledge. There is a limit to what a human being can know. We should also remember that knowledge can change dramatically with time.

There are several reasons why we should pay more and more attention to the formal area. Although the contents of knowledge changes, the formal aims will prevail. An overemphasis on formal goals should be avoided, though. If we do not have the basic knowledge we cannot succeed in solving problems. Creating of meaningful units is essential, too. Critical thinking will not be learned only through general studies of logic. What is needed is knowledge of the structure of different fields of study.

FORMAL GOALS

Concept formation and applications

The teacher must have some kind of an idea of how concepts are acquired and what is their role in thinking. She must also know something about the relation between concepts and language in order to stimulate positive concept formation in children. A mechanical memorizing (e.g. learning by heart without understanding the contents) of unfamiliar words, to take an example, does not promote concept formation. The role of perception in concept formation should not be forgotten, either.

Knowledge acquisition through perception becomes more effective if the percepts are *classified*. Higher order concepts are generalizations covering all the instances of a given category. Through manipulation of concepts the human being creates regularities in his environment and in the events around him. What is observed is classified into so-called percepts., Quite frequently, though not always, there are linguistic signs which correspond to percepts. The child's percepts are reflected in his behaviour before the onset of language. A rapid broadening of knowledge takes place in connection with language learning. If a percept is of vital importance there is generally also a corresponding linguistic sign.

Abstract concepts which have their foundation in experience ought to be traced back to organization of percepts. E.g. animal, tool, goodness and truth can be regarded as concepts of this type. The educational process should promote creating a rich store of concepts and train their correct use. There are also reasons for encouraging formation of abstract concepts: they facilitate handling of vast areas of reality.

Applying correct names to concepts should be trained. It is important to notice that the concept and the sign are two separate things. Mathematics and logic operate with signs. A concept can correspond to a combination of signs (e.g. mastering of German, freedom from compulsory education). Names are attached only to concepts which are in continuous use.

A common error in education is to operate with signs which do not correspond to the child's concepts, or to use

without explanation a word combination which refers to something else than the separate words. We see that manipulation of words is not fruitful if the relations between the underlying concepts are not understood by the child. Also, there is a number of words which can be understood correctly only within a given context.

Learning of concepts can be facilitated through pointing out how the concepts differ, or by showing "negative" or "exaggerated" examples. At the most general level, thinking can be sharpened through operations with abstract logical and mathematical concepts which can be applied to various fields of human knowledge. (Vide Natural language and formal systems).

Order relations

A number of concepts allow for establishing order relations between them and combining them into organized structures. We should, however, keep in mind that a structure characterized by order relations and the set of relations are two different things. If we disassemble a car the set of elements does not change, but the structure does. In a similar way we can think of a class as a set of pupils and as an integrated whole.

There are order relations which somehow can be conceived as "natural". Take for example temporal order. We have often a possibility of establishing a variety of meaningful order relations within a given domain: which we prefer is a matter of purpose.

Establishing order relations is an operation comparable to classification. Order relations deserve attention at an early stage of concept formation. Pupils should experiment with ordering of simple things. The children should also feel free to create order relations which appear to the adults "unnatural" or "meaningless". This activity may facilitate a critical analysis of established pattern and promote creating new and unusual ones.

Reasoning

Induction and *deduction* are the most common forms of reasoning. Deduction proceeds from the general to the particular, whereas induction starts from simple observations or concepts which form the basis of generalizations.

Induction is generally incomplete, i.e. generalizations are not based on all members of a category, but on samples which should be representative in order to avoid bias. Incomplete induction can be made more reliable if results of earlier studies can be incorporated. Empirical research starts often from a formulated theory. Then hypotheses are made, and they are subjected to empirical verification.

Occasions for testing of hypotheses derived from theories, or for collecting representative samples, are likely not to be frequent in the comprehensive school. What will be more common is induction based on samples good enough to allow for due generalizations. Relevant inductive thinking can be practiced e.g. in learning situations where the children observe how the plants grow, or when they conjugate verbs in tempus.

Advanced level mathematics teaching is likely to yield opportunities for complete induction.

Thinking based on analogy is also worth attention. It is often an easy road to a new thing, but does not allow for proper confirmation of knowledge. This is a thing the children should grasp. They should recognize e.g. that though both the birds and butterflies have wings for flying, the butterflies are not included in the category of birds. Language teaching can make use of analogies in illustrating word formation and declination according to a given pattern.

Evaluation of knowledge

How to evaluate knowledge depends on what phase in the process of knowledge acquisition we focus our attention on.

The validity of perception refers to the correspondence between perception and reality. Learning of traffic regulations offers a chance for dealing with problems of unreliable perception. Analyzing optic illusions serves similar purposes. Adequate perception implies also a correct use of corresponding concepts and signs, i.e. differentiation of phenomena should be accompanied by correct naming processes. Validity can be tested e.g. by making repeated observations of the same object or event, or by comparing observations made of the same phenomenon by several people.

Precise use of concepts implies understanding of the area of the concept and correct use of the corresponding sign. We must also recognize the way of interpreting a concept in the community of the speaker. Frequency of usage can lead to

lack of precision and to abundant emotional connotations. To illustrate that the concept and the corresponding sign are two different things the teacher can introduce new signs for temporary use. She can e.g. indicate numbers with signs which are different from those we generally use.

Correct classification and order can be tested by finding out if a principle of classification has been applied in a systematic way, and by examining whether the order relations are meaningful or not.

Adequacy of classification and order relations can be evaluated by showing that they are applicable in solving certain problems. The Linnee system facilitates plant classification, but is of no use in biology in general. As classifications are easy to learn, and knowledge about them simple to control, they should not be devoted too much time in the curriculum on the cost of neglecting more important things.

Reasoning can be controlled by making the various steps explicit, and through considering alternatives.

Discussing the *truth of a proposition* begins with finding out whether it is possible or not to verify or falsify it on the basis of observation. An empirical proposition is true if its implications are true. On the other hand the truth value of a proposition can be determined without empirical observation, e.g. on the basis of previous knowledge. For example, as we know that there is neither water nor air in the Moon there cannot exist human life either.

Textbooks seldom make it clear that there are propositions which we cannot prove to be true or false. What we can do in these cases is to find evidence for how probable it is that the statement is true.

Problem solving

Here we use the word problem to refer to a new situation or task which has to be solved. Problems cannot be solved on the basis of memory alone, or by applying mechanically what has been learned before. Organizing of elements, and applying of systems in a meaningful way, are characteristics of this process.

Problems differ to their quality and level of difficulty. In simple cases problem solving is almost identical with what we call application. As speed and training are often associated with the concept of application the word is not used here. Applications are included in problems solving though.

We do not always succeed in problem solving. When we fail we have to find out reasons for it. The following list gives some.

a) *Lack of data, or false information.* Sometimes there is no chance for obtaining more data or for perceiving what is wrong.

b) *The situation has been misinterpreted.* The child may have applied irrelevant concepts, or false relations of order or correlation. A wrong interpretation is often result of incorrect perception.

c) *Relevant information or skill is not applied.* The child may not have been able to perceive the structure of the phenomenon. She may be able to master the technical procedure but fails to understand the meaning of the process. This can often be seen in mathematical problem solving. The child may know how to calculate (e.g. percentage), but due to lack of understanding of the

underlying principles she is not capable of applying her skill.

d) *Insufficient practice of a technical skill* can become an obstacle in problem solving, particularly in situations with a time limit. Mastering of the multiplication table can be taken as an example.

e) *Inadequate way of thinking* can lead the child astray. She may give the concepts too narrow an interpretation. Fixation may prevent the child from seeing the direction of the solution.

Analyzing the reasons for failure can illuminate the roads to success. Success in problem solving implies a favourable general attitude. This is why school should create *a positive atmosphere for meaningful inquiry into the nature of things.* In addition to skill, also a desire to tackle problems is needed. Because problem solving needs time and as the opportunities for immediate positive reinforcement are sometimes limited, self-reliance and a motivation for working towards distant goals, should be encouraged. These aims can be reached e.g. by presenting in the beginning problems which take time to solve but which have a high probability of success.

Formal models of problem solving are not to be recommended for common use in the comprehensive school. It is more natural at this stage to concentrate on problems close to everyday life.

The children should be encouraged to flexible thinking and free experimentation with various alternatives. Failure should not lead to immediate giving up of the task. Fixation to an alternative which does not yield a solution should be avoided.

What has been said is closely connected with the observation that children tend to stick to methods which have lead to success at first attempt. This is most likely to happen if the problem has been a difficult one. Therefore it is important *to point out, if possible, that a problem may have alternative solutions.*

At the lower levels the children should first be engaged in solving simple problems. Later they can proceed to more complicated ones. Some problems they can learn in a solved form. In addition it is reasonable to provide cues for solving, e.g. by referring to relevant information or by guiding the children to find it. Cues for avoiding the most probable mistakes can also be presented. Gradually the number of cues can be diminished and the so-called cue treshold can be made lower. What has been said is a challenge to those who stand for the instructional material.

At the higher grades the students can be engaged in solving more complicated problems. School should provide stimuli and opportunities for this kind of activity.

At an advanced level it is also worth while to present problems which can be solved in several ways, and problems which have no reasonable solution. In the latter case it should be made clear why the problem cannot be solved.

Sometimes too much importance has been attached to problem solving. This has not yet been the case in the Finnish schools. It is worth while considering what information should be given directly. Thus it would be possible to avoid the negative effects of overemphasized problem solving behaviour: waste of time and learning of ineffective study habits.

Problem solving situations are excellent to show the

structure of knowledge. They are also good for illustrating the practical value of acquired knowledge. That is why developing this skill has implications with regard to the material aspects of cognitive behavior. As a formal skill it will be of particular value in a changing world.

Creative thinking

Solving a problem is to find out something new. In a way problem solving is creative activity. Creative thinking is often defined as an activity which produces new results which are valuable for a number of people. Nevertheless, the conditions for this are the same as for "ordinary" problem solving.

Convergent thinking is characterized by proper selection of concepts and patterns of thinking fulfilling certain criteria. Creative activity includes elements of both convergent and *divergent thinking.* The latter is characterized by free production of alternatives without prescribed criteria. Encouraging uncritical "intuitive" thinking in children with difficulties in the cognitive area may have a therapeutic effect. The children should, however, grow accustomed to subject the results of divergent thinking to a critical analysis. At the same time it should be taken into account that this stage does not block the child.

Creative thinking is part of human creative activity which has its origin in several sources and is subject to abundant research at the time being.

COGNITION AND OTHER ASPECTS OF PERSONALITY

Cognitive activity is an integrated part of human functioning. Acquisition, evaluation and application of knowledge are related to other sectors of life. We have to take into account the material and mental resources as well as the methods and areas of application, their relevance and the ethical problems involved (e.g. what kind of animal and human experiments are allowed). Children ought to recognize that applying of knowledge poses ethical questions: whom is the knowledge for, and what purposes it will serve?

We should emphasize that the children ought to learn from the very beginning *to respect truth.* Children are quite capable of making a distinction between respect for truth and a naive, humourless and uncritical acceptance of all things, heard or seen, as true.

We attach a highly positive value to intellectual play but recognize simultaneously the importance of veracity as a prerequisite of persistent and fruitful persuasion of knowledge.

The whole personality, including emotional reactions, penetrates the cognitive activity. Directing of learning processes includes always care of maintaining a positive motivation.

OBJECTIVITY AND BALANCE IN INFORMATION TRANSMISSION

Informational media are often accused of lack of objectivity and biased views particularly when they transmit information about different people, various social, political and religious systems, interpretations of past experience, planning of future society etc. A bias can be result of an unfair selecting of facts to be presented in a certain context. A bias in text books may have its origin in the attitudes of the author who may devote plenty of space to aspects and events towards which he has a positive attitude; and he may be silent about things towards which his attitudes are negative. A similar situation may develop in the classroom when the teacher has to decide, within the limits of the curriculum, how much time is to be devoted to various topics.

Objectivity in distributing information about various phenomena of the social reality can be increased through analysing the phenomena within a broad frame of reference, and from various viewpoints. Dealing with isolated facts, or discussing social institutions without taking into consideration the historical background and connections with other phenomena, is likely to result in a biased view. To promote balanced views the children should learn that the attitudes of the individuals and social groups often reflect what has been experienced important in different life situations. As the children should learn moral evaluation and developing of personal opinions and values, education should not be objective in such a way that it would avoid considering value problems. If all problematic questions are avoided, topics of

secondary importance tend to become the center of teaching, and children remain ignorant of the present-day problems. It is the obligation of the teacher to discuss the problems from several points of view.

If the teacher presents her own views, the children have also a right to know what are the basic values behind. The demand for objectivity should not be interpreted to mean that an ideal teacher is a person who is emotionally or morally indifferent to the world situation. The school atmosphere should make the children feel free to express their views and motivations, and at school they should grow accustomed to tolerant discussion even when problematic questions are at stake. Limiting the freedom of expression does not promote transmitting of information in an objective and unbiased way at school.

NATURAL LANGUAGE AND FORMAL SYSTEMS

In an earlier passage dealing with thinking we devoted some attention to natural language which, together with thinking, constitutes the basis of human culture. It opens the door for advanced cognitive functioning, communication of ideas, and high level mental interaction in general. Language yields an opportunity for operating with signs which stand for things, and it allows for thought level connections between things which cannot be associated otherwise in space and time.

Language, mother tongue in particular, being an impor-

tant tool of communication and thinking, plays a central role in mental development. In various fields mastering a foreign language has become more and more important as communication between different peoples has increased.

As an example of formal systems we have chosen mathematics, and here we compare it with the natural language.

Because one of the main functions of language is to provide means for communication, it can be thought of as a practical system. The system of mathematical signs forms on thought level a world of its own. We can consider it as a self-consistent system independent of its application, though its applications are numerous and important.

The language of mathematics is *abstract* in the sense that its symbols refer to classes of things, i.e. general concepts, whereas the abstract concepts of a natural language can be traced back to things, people, events and relations. The abstract character of mathematics allows developing mathematical systems which can have useful applications.

Mathematical symbols are *artificial.* They have been taken into use deliberately whereas mother tongue has been learned through immediate experience in a speech community. The nature of this community has influenced the direction into which the language has developed. Foreign language learning shares elements in common with learning of one's mother tongue.

The number of people mastering the mathematical language is relatively small compared with the number of speakers of any natural language. At present there seems to be an increased demand of mathematical skill as mathematics is

being applied to new fields, not only to natural science and engineering but also to behavioral sciences, data processing and various other domains.

Due to the fact that natural language has developed as a result of experiences by numerous people and human groups, its symbols show often a diversity of meanings and emotional connotations. Mathematical symbols yield preciseness of meaning and unambiguous interpretation, and allow for correct deductive thinking. Creating and using artificial symbols is a matter of purposefulness. It has been considered important to develop a system which allows for a clearer reasoning than do the natural languages.

Both in natural language and mathematics several symbolic systems can be used. In mathematics we are free to choose the axioms and develop the systems accordingly.

In dealing with applications the mathematics teacher should make the children understand what are the areas of these applications, e.g. what are the different situations in human life which require knowledge of how to count.

Not only mathematics but a number of other fields, such as chemistry, physics and music make use of symbols which differ from natural language. The children should develop *a flexible attitude, free from prejudice, towards various symbolic systems.* At the comprehensive school level it is possible to introduce only a limited number of systems.

THE MATERIAL GOALS

Curriculum and the structure of knowledge

The structure of knowledge consists of basic concepts and their relations (laws and regularities). At an advanced level, a field of knowledge is characterized by parsimonious descriptions: a minimum of basic concepts are used to describe and predict a maximal amount of phenomena within this field. That the structure of knowledge has become more simple and abstract has an impact on curriculum planning. Topics which earlier would have been regarded too complicated to be discussed at school can now be included in the program. The structure of knowledge must, however, be translated into a language which the children understand.

How knowledge is structured affects the learning process. A clear structure is easy to learn and remember, and simple to apply to new areas. The curriculum as well as the text-books should reflect the structure of knowledge. In selecting and presenting material the teacher should aim at organized structures which yield effortless and successful learning.

Here it may be worth while to remark that middle grade pupils are capable of structuring the material they read – after some training, if not otherwise – by underlining and writing notes in the marginal. In some cases the children find it difficult to see how the material at hand is different from what has been learned before. Here the teacher should interfere and lend a helping hand.

Principles for selecting curriculum material

What are the fields of knowledge to be included in the curriculum? In selecting material, new fields should be taken into account. Moreover, it should not be forgotten that the categories of knowledge are undergoing a change. Which subfields to include and which to omit, has also to be decided.

1. Attention must be paid to fields which are crucial in constructing a world view. The individual should not be at a loss when she deals with *nature, technique, art, social environment and different world views.*
2. The curriculum has to include material which yields the basis for *vocational or further studies.*
3. In addition to its informative value the learning material should promote *the personality development* of the individual.
4. The curriculum must supply the pupils with knowledge which helps them to cope with such tasks and problems of daily life which are difficult to deal with on the basis of everyday experience alone.

When it has been decided what fields of knowledge will be included, the next task is to select proper material. It should be representative of the field in question, informative and attractive to learn.

Education and the mass media

Mass media have become important sources of human information. We are in daily contact with them. Particularly children and youngsters spend plenty of time, not infrequently several hours, with them. Almost all children of preschool age, and a majority of teenagers obtain most of what they know through mass media. These media influence public opinion and they are the channels for obtaining new knowledge. They provide children with an abundancy of material, both curricular and other kind. It is not of secondary importance to learn how to make use of mass media and how to maintain a critical attitude to the information mediated through these channels and other sources. The formal educational criteria can be easier to attain if mass media are made use of in a relevant way, and if the so-called permiability principle is applied at all levels.

Mass media education trains the children to perceive and interpret communicated messages. It aims at a selective and critical reception of messages. Its goal is also to encourage pupils to develop their own view about messages transmitted through mass media and other channels of information.

Attaining of these goals requires knowledge of the development of information transmission and its meaning in the present society, and in the world in general.

It is important to find out what kind of means of expression are used in mass media, what types of programs are transmitted, and how the various messages influence people. In order to attain these goals it is important to pay attention both to the nature of information the children are

supplied with and to the methods of instruction. A good way of developing critical thinking and personal views is to work in groups that allow for free expression of views and which do not try to persuade the members to conform to a single answer, but which consider alternatives and point out the consequences of different standpoints and attitudes. Information should be available in a form which lends itself for independent finding of answers and explanations, and instigates making of questions and formulating problems. Mass media education can promote understanding and accepting heterogenous views and a sympathy for divergent thinking. It can promote international understanding. The structure of knowledge transmitted at different levels will remain the same, but step by step the program can be extended to cover more intricate questions and elaborate methods, and shifts of emphasis can take place.

Mass media education does not separate between the formal and the material goals. Here is an example to show how close connections there are, on one hand, between knowledge acquisition and social and moral education, on the other.

ETHICAL AND SOCIAL GOALS OF EDUCATION

Asking what is right and wrong, true and false, and what are the duties and rights of man, are essential questions in ethics. Human beings do not live alone, they are members of various groups and in continuous interaction with others. Here is the origin of a number of ethical questions. Ethical principles control the process of interaction and the relations between groups. This is why the essence of ***moral education is to promote positive social interaction and respect for the rights of other human beings.*** Social education – growing into membership of a society – will be superficial unless it takes into account the ethics of human interaction and leads to the assimilation of fundamental norms. This is the link between ethical and social education. At school there is no single subject which would serve this purpose alone. All the teachers in the comprehensive school should feel a responsibility for the ethical and social education of the young.

Co-operation and responsibility will be learned if the school gives incentives for developing positive interaction behaviour. School should promote self-control and discourage negative forms of social behaviour. This should not be

attained by applying methods which lead to inhibition of behaviour and expressions. School should promote working towards long-term goals and develop frustration tolerance in the young individuals. The teacher ought to know what kind of frustrations in school situations can be harmful for the child.

School should not make children think that all the so-called virtues are of equal importance. The teacher should respect the individuality of the child and she should avoid presenting her own view of an ideal personality as a goal. We ought to recognize that *the so-called virtues required in different social situations may vary to their quantity and quality, and what is called for may depend on the position of the individual.* Daily school life should emphasize the positive value of *kindness* and *readiness to help* as well as *justice* and *truthfulness.* It is worth while to make children understand such fundamental ethical concepts as *duty, responsibility* and *conscience,* and make clear how they are related to conditions of human interaction. Some of the so-called virtue inventories can be introduced. Lectures and discussions as such are not sufficient to guarantee that the children have absorbed these ideas. From the elementary level and on, these concepts should be *associated with daily school situations.* Through this experience the children will be able to develop their own personal ethical and social norms. Success implies participating in and sharing of responsibility in class and school management.

School should make clear what is the role of *rules* in human interaction. Motivation for having rules can be learned by considering what would happen if we had no rules and by

reflecting upon what we can promote by various rules in a given community. Religious education presents the ethical and religious principles as interconnected, but it is worth while to point out that the members of a society share a set of common norms which they accept despite differences in their religious and philosophical thinking.

A central position among ethical values should be given to those presented in the United Nations Declaration of Human Rights. According to Article 26 education should promote the full development of the human mind and respect for human rights and freedom. It should promote understanding, tolerance and friendship among different nations and races as well as religious groups, and support the activities of the United Nations for maintaining peace. This declaration can be regarded as a document of general ethical thinking which has developed during a long period of time but which is modern in its message. Norms based on these fundamental values and principles should be respected in the society. Breaking them means violation of the fundamental rights of others. Teaching should make it clear that it is possible to agree on this type of norms. A society has, in addition, norms comparable to prescriptions which may not be accepted by all. School should give information about the prevailing social norms. Attempts should be made to clarify the background and motives for having such norms. If the pupils understand the motives and the underlying values they will be more ready to agree on relevant norms of action than those who have been taught the norms without explanations. The motive for observing of social rules at school is to promote good human relations. The religious education should aim at developing

love of one's neighbour and a desire to practice it among human beings, in large and small communities.

The children should learn the frame norms of the society, i.e. *juridical norms* and goals of *social policy*. Violating the juridical norms is followed by legal punishment. The direction of social policy reflects the values underlying social action. Discussion of social norms should cover the rights and liberties guaranteed and protected by law. Attention should be paid to the Constitution which stands for the values which have been regarded as the crucial ones. School should not emphasize obedience to law without showing that the society itself is responsible for the norms that are maintained by law. At an advanced level, comprehensive school should offer *a special course* about the development of the views on human rights in various parts of the world, among different religions and social systems. In this context school should not neglect to present how different countries take into account the efforts which are being made within the field of international law for promoting human rights. Declaration of human rights is a declaration of human responsibilities. Rights and duties of man can be guaranteed through social and international order. These principles deserve to be emphasized. At school too abstract discussions should be avoided. Teaching can start from presenting situations where the human rights have been violated, or people lack them. The pupils should observe that the norms generally prescribed by law are stated in the form of prohibitions, but the ethical norms of a society consist of obligations which should become internalized and independent of the external sanctions.

Every individual has a human value independent of

occupation, wealth, race, age, achievements, health, abilities or other personal characteristics. Nevertheless, school should emphasize that it *is valuable to make efforts for developing oneself*. A concrete aim could be to learn not to despise any one, but to be friendly and show willingness to help those who are in need of help, old people in particular. School should not fail to provide the pupils with an abundance of opportunities for phenomenal experiences about the cognitive and emotional world of other individuals, and the children should grow to understand various life conditions and related problems.

We should distinguish between social value which is reflected in the living conditions, and the value which an individual has attached to his life. The former provides some kind of frame for "human dignity", and within this frame she can make efforts for developing herself. This in turn may affect the value she attaches to her life. Those possessing now a high living standard should not deny the human rights of others by referring to some "intrinsic values of life".

A school class, and the school in general, should form a community which cultivates warm human relations and where the members feel mutual responsibility and strive for common good. The child should learn that she should not take a liberty which she is not willing to allow others to take, and not force upon others duties which she wants to avoid. On the basis of personal experience the children should develop an inner conviction that social interaction based on such principles has an intrinsic value and that these principles are worth of applying in all communities. Internalizing of these ideas should be reinforced in various connections. The

principles could first be applied in small communities the child is familiar with, and later they can be extended to cover larger human groups as well as problems common to the whole mankind and to moral evaluations of suggested solutions. At present the crucial ethical problems are those connected with inequalities in living conditions. Religion, biology and geography, social science and civics, literature and history are subjects which in particular bring the students' attention to ethical questions.

School should make the children recognize that they are members of a people with common traditions. Teaching should make children understand how the work and thinking of previous generations has influenced the society, and they should grow into a responsibility for developing a society which would allow for all citizens a possibility for a humane and rich life. A nation with a cultural tradition of its own has something to offer on an international level. To start with, we ought to recognize that differences between nations need not indicate that one nation is better than another; differences can be attributed to external circumstances and events in the past. At the same time the children should *grow conscious of a solidarity between all nations.* They should learn to appreciate cultural variety and to keep cultural patterns of other nations in esteem, and to recognize that the nation she belongs to – and ultimately its individual citizens – are responsible for the future of mankind.

Superficial talking about international solidarity and peace will probably have no permanent effect. The comprehensive school should evoke thinking and attitudes which would lead to a deeper personal involvement. Discussion of different social

systems should provide the growing youth with an insight into the problems which the different systems have been able to solve, and to what are the questions which still wait for an answer. School should not make children think that one system has succeeded in every single respect, and another failed in all its solutions. School should discuss reasons of international military conflicts, and consider alternatives for solving disputes. Comparing of cultures or religions should not give the children a notion that there is a relation of competition or superiority between various cultures or religious philosophies.

In order to allow for a meaningful way of dealing with one's social environment, and in order to increase chances of social interaction and participation, school should provide information about the structure and functions of the society. Within the school community, and in different activities, the children should grow to understand the preconditions of a harmonious coexistence, meaning and value of division of labour, as well co-operation in large and small social groups. *School should prepare the youth for taking responsibility as employees, citizens and family members.* For attaining these goals *school should distribute relevant information and train the necessary skills.* Children should pursue studies on the development of social institutions (economy, politics, social security, education, family, law, religion, defense) as well as their function and interaction. The growing individual ought to recognize the responsibility of the members of the community in developing social institutions, which should not be thought of as aims in themselves, but as means for obtaining certain goals. Education should be extended to

cover crucial moral problems from various spheres of life, e.g. human rights of different social groups, use of power and politics, family and sexual behavior, education and schooling, distribution of commodities and services, property, mass communication, controlling of social norms, delinquency and traffic (implications of risk taking behavior on personal and other people's security). Pupils should develop a capacity to find an answer to social problems by making use of knowledge based on research. They should grow conscious of how moral opinions and values are associated with complicated social questions. School should reveal the world of social disharmony, *teach how to live with conflicts, and how to find positive solutions to social problems.* This can be done, not only during lessons, but also in conflict situations at school. These situations yield a natural starting point for social education.

Learning the rules of social life can be attained in group plays common in physical education. These situations are of a paramount educational value as they allow for attempting to win in a dishonest way, i.e. through disregarding the rules. Competition can also instigate aggressive behavior. Fair play implies the idea of an honest regarding of rules and a nonaggressive attitude towards fellow players. Promoting of this behavior can be done only by someone who has internalized the idea of fair play himself. He ought to make this goal clear to the children, and in the play situation he should reinforce observing of rules, and make the players perceive the "social rewards" associated with fair play as well as the negative consequences of breaking the rules.

School regulations should be harmonized with educational

goals. The values underlying the regulations should be such that the pupils can accept them. If the rules are not considered worthy of respect but thought of as mere expressions of authority, school is likely not to promote the social and ethical development of the young. What the children should learn in class, and at school in general, are *the elements of democracy. With increasing age more and more opportunities should be given to the pupils for participating in making decisions about school regulations.* Control by external authorities should gradually be substituted by inner control. As the intrinsic social organization of the school is reflected on the social and ethical development of the children, school should not fail to pay attention e.g. to problems of distribution of power and communication, and to factors affecting the interaction process between pupils and teachers.

Learning of rules should start from everyday situations. Relevant rules to be discussed are e.g. those promoting security on the way to school and within the school area. Then the children could reflect upon rules which are designated for guaranteeing harmonious working conditions and for promoting comfort.

Teaching of manners should be accompanied by an understanding of the meaning of good manners in human interaction. Manners which do not have meaning for the children should not be required. Education should discourage "undemocratic" forms of behaviour, e.g. that those of "lower status" should show correct behaviour with respect to those of "higher status" but not vice versa. Before leaving the comprehensive school the young individual should get training

for future social situations which require specific patterns of behaviour.

Distribution of responsibility among teachers and pupils implies also *equality in observing good manners.* If the teacher does not show friendliness, helpfulness, feeling of obligation and good manners, how could the youth acquire these behaviour patterns. Acquiring positive patterns of behaviour is part of teacher training.

School must provide its pupils with *"technical"* rules which regulate various activities in a modern complex society. As an example we can mention the traffic regulations which the children should learn to observe when they start going to school, and preferably even earlier. We should also recognize that traffic regulations are not mere technical rules. Attitudes towards others in traffic form the core of the regulations. Education must be extended to cover other regulations (fire protection, drowning accident), which guarantee safety in various environments, as well as tasks which require common action. This includes safeguarding of personal property, e.g. respect for schoolmates' personal things, care of school building and equipment, which are common property. Participation in civic activities calls for observing of rules, too. A condition for social participation in a wide sense, is knowledge of and respect for international agreements and organizations.

GOALS OF RELIGIOUS EDUCATION

Religious education takes place in accordance with the principles of the religious community to which the majority of pupils belong. This is the perspective from which we look at the goals here.

School aims at developing a versatile personality. This implies that school should bring the growing individual into contact with religion and religious values. *A mature personality is capable of deep emotional experience.* School should favour personality development in this direction, *This means recognition of things and events which evoke deep religious commitment.*

The Western culture, including our own, is penetrated by the Christian tradition. Children should learn this in connection with various subjects and in discussions about culture. The Christian influence can be seen in our thinking about justice, in development of the juridical system, in education, in social welfare in our concepts about marriage, family and education, and in various moral norms. Understanding of Western music or visual arts is impossible without a knowledge of the essence of Christianity and its traditions.

The influence of the Christian heritage on various fields of culture should be presented in a large perspective. In evaluating it various criteria should be applied.

In addition to our own religious tradition the children should become acquainted with the contents of other religions and *moral principles,* from the standpoint of those who support them, and consider them in a larger cultural context. Education should promote understanding of religious convictions and philosophies of other people and societies. It is of crucial importance to emphasize that differences in religion and philosophies should not bring about aggression between different groups. As such conflicts exist in the world, the children should consider the reasons for this. The Curriculum Committee wants to emphasize in particular that *religious education in the comprehensive school should not present the destruction of individuals and people as an act of (the Christian) God.* An education for international understanding and peace in the spirit of the UN Declaration of Human Rights will be empty of meaning if we accept thinking which leads to the destruction of other people.

A number of subjects will include discussion about the basic moral problems of our society and the whole mankind. A goal of religious education is to show what kind of solutions have been and can be developed on the basis of *Christian ethics and the moral principles of other societies.* Teaching should illuminate elements common to all Christian sects and avoid attaching importance to differences of interpretation. Love of one's neighbour, and acting accordingly, should be aims of religious education. The comprehensive school should make the pupils familiar with the basic

ideas of Christianity, and create a foundation for personal religious views. *School must respect the philosophies of pupils' parents* as well as the personality of the young and their intrinsic freedom of choice. Teacher should not guide the religious life to a direction which would bring the growing individual in conflict with his parents. *Things which might have a negative effect on mental balance should be avoided.* Teaching should separate between facts and value judgements. The children ought to learn to perceive the difference.

The characteristics of religious experience should not remain unclear, and it should be pointed out that *there is not necessarily a conflict between belief and knowledge.* Religious experience does not exclude rational thinking and acquiring of knowledge, contrary to what has often been asserted in public discussion. These opinions may originate in religious education which has focussed on inessential points, or in a failure to perceive the difference between knowledge and religious values. Religious language differs from that of science or literature. It is tied with tradition and oldfashioned, and it yields for understanding only through reinterpretation.

Religious education should not concentrate on systems or a collection of facts. It should aim at developing a harmonious personality.

As religious experience is a matter of deep personal involvement, *school should avoid compelling it into existing forms.* Individual differences in experience should be accepted and taken into account. In this area too, the individual should have the right of genuine and rich expression of his experience. Occasions for this come up, e.g. in discussions about actual topics, or in connection with the school day

opening ceremony. According to the Comprehensive School Act informational material about ethics should be distributed to the members of State Church in connection with religious education. The Curriculum Committee accepted, however, a view according to which *ethical principles should permiate teaching in all its forms. To complement this a special course on moral problems is also needed.*

If five children or more, confessing the same creed, do not attend the general religion classes, they are according to law entitled to religious education corresponding to their creed, if the parents express a desire for this. In this case too, the general principles expressed before should be applied *mutatis mutandis*, and what is taught should not be incompatible with the general ideas. According to the principles of religious freedom promulgated by law children can have a dispense from attending religion classes. These children are entitled to an education comprising history of religion and ethics instead. This education could comprise discussion about the role of Christian tradition in our culture, and the religious and ethical contents of various religions.

GOALS OF AESTHETIC EDUCATION

Aesthetic education should concentrate on *fostering and cultivating of creative activity.* What we mean with creative activity here is not practicing of artistic activities which would yield results of great cultural value; the word refers simply to a behavioral process, free from given forms and new for the actor in expressions and results. All the children should be entitled to creative activity in the comprehensive school.

Comprehensive school should give stimuli for creative self-expression. Small children express their feelings and ideas through spontaneous motor activity. Expressive movements promote development of creativity in various areas. Expressive movements can be associated with singing, playing an instrument, reciting poems, visual experience, improvization and dramatization. In early years, play and manual activities yield opportunities for developing creativity. The best stimuli for creative expression in elementary level children will be provided by a teacher who is capable of creative expression in various domains and who is spontaneous in communicating to the children the joy she feels in aesthetic experience and creative expression. All the children should be given the

opportunity of experiencing the enjoyment of creative activity and self-expression. This is to be regarded as the most important goal at the lowest grades of the comprehensive school.

Creative activity promotes harmonious development of personality, and mental health. This process is independent of the quality of achievement, if judged by general standards. Creative activity is of particular value for youngsters who often show inhibited behavior at the onset of puberty. In creative self-expression the experience is more important than the result. The teacher should be sensitive in her attitudes towards the products of this activity. She should not extinguish the joy and desire of expression in children whose actions are below the common standard. Sensitivity is required in particular in teaching youngsters in their puberty years as they may show a highly critical attitude in judging their own achievements. At a lower level emphasis on correct spelling may become a source of inhibited expression. Some foreign investigations show that creative writing is of importance for personality development also in groups which have difficulties with correct spelling. Formal criteria of oral expression should not become a hinder of free self-expression.

Aesthetic education yields a number of possibilities for individualized education. Major part of human life is subjected to various rules which must be taught at school. To balance the learning which aims at social adjustment and acquiring of knowledge about culture, a growing individual needs multiple opportunities for aesthetic experience and expression.

As aesthetic values grow in importance in various sectors of human life, aesthetic education should not be limited to

art subjects alone. It should permiate the teaching of all subjects.

Developing the ability to deal with aesthetic material could be based on various types of experiences such as a) reception of art, b) verbal analysis of art, and c) practicing of art.

a) *Receiving of art.* Creating art includes a continuous communication between the ideas and thoughts of the artist and his material. When we receive art we perceive the structure of the object (the relations between various elements). What is experienced can partly be explained by referring to this structure. Emotional material embedded in the art object fires a unique personal experience. A disturbance in reception of art may be brought about if the individuals are taught to expect that art represents something, or that it communicates a message yielding a single interpretation which should somehow be understood. On the other hand, it is worth while to teach that sometimes it is the aim of an artist to communicate a specific message. Differences in aesthetic experiences can be explained by referring to differences in structuring the material and to various ways of reacting to what has been perceived. Aesthetic education can develop sensitivity and emotional depth of perception. Education is not likely to affect the art experience of various people in the same way: human feelings are results of a lifelong process. The unique and individual way of experiencing art may become endangered if the teacher is too rough in guiding the children towards some particular way of experiencing art.

Teaching of literature should make it clear how the language used for aesthetic purposes differs from e.g. scientific language or the language of everyday communication. The children should recognize that literature does not serve only aesthetic purposes: it can transmit information about the "reality", or it may try to influence the ideology of people or moral attitudes, etc. Literature can also have a therapeutic value. That is why the pupils should become familiar with pamphlets and similar material. Besides literature there are also other means in the society for attaining these goals.

b) *Verbal analysis of art.* An analysis which yields a deeper understanding of an artistic entity consisting of expressive elements can be accepted as a method of developing aesthetic sensitivity. Through verbal means we can analyze the position and meaning of art in a particular period and in a given society. We can also illuminate the historical and social background of various schools and individual pieces of art.

A verbalization can be directly harmful if it comprises a mere description of the art object. Art education should avoid wasting of time on matters of secondary importance, such as reading about the life of a composer, or an evaluation of his work, if this is done at the cost of aesthetic experience, enjoying of music in this case.

Intellectual analysis of art can be boring and kill the interest in art. Analysis has its proper place in research. It is of value for the aesthetic experience if it evolves from the direct experience.

c) *Practicing of art.* The emphasis of art education should be in practicing of art. It should be a medium of creative expression and develop sensitivity in the aesthetic area. That is why it should not be limited to mechanical practicing of a technical performance. If school succeeds in promoting aesthetic sensitivity, interest in art can be maintained even later. In discussions about art it is not meaningful to separate the goals of an artist from his media. Both the material and the technique contribute to the final result. Learning about them is an essential part of art education. Experimenting with different materials and techniques yields experience about their possibilities and limitations.

Selecting skills to develop and techniques to train poses a problem: how could we know what are the areas where the growing individual will show his or her skills? We cannot give a simple answer. This is why aesthetic experience should be cultivated in a variety of areas at the elementary levels of the comprehensive school. Only a small child is capable of completly spontaneous expression without self-criticism. When she grows she becomes conscious of differences in performance and of the criteria used by the society for evaluating a product of art. There is danger that the child loses interest in creative expression in a field which does not allow for good performance. She ought to learn what can be done using various techniques and materials in order to find her own area of expression which would allow for a performance that encourages further development and maintains her interest in creative activity despite an

increased level of requirement. Rating of individual performance should not be done by comparing it with others but with previous achievements of the individual in question.

Aesthetic evaluation can be developed by making children familiar with artistic achievements in various fields. The pupils should get acquainted with the art of children and youth as well as with art produced for adults, all according to the developmental level of the children. Some works of art attract only for a short time and will soon be forgotten, whereas some fascinate people of different generations and ages. The supply of art is plentiful. We ought to be able to pick up those which attract children and create interest in art. The young should be encouraged to visit art exhibitions and artists should be asked to visit schools. We should develop forms of education which promote aesthetic judgement and responsibility for the human environment.

Recent discussion has emphasized that art subjects do not deal with special aesthetic material only, but they cover matters both concrete and practical and closely tied with daily life. The word "aesthetic" is often associated with high culture, beyond reach of all children. Increased leisure, high material standard, and a form of civilization which has increased "cultural hunger" have brought the aesthetic world closer to every citizen.

The present curriculum aims at developing individuals who are capable of creating an enjoyable and a harmonious environment. Aesthetic education provides stimuli for creative expression and activity which bring people closer to each other.

Art has become a social matter which, in turn, has influenced the attitudes toward art education. Art has become "a popular culture" in the proper sense of the word without depreciating connotations. Art gives opportunity of collective experience and performance, and offers chances for participating in the activities of social groups and for solving problems. Through all this art subjects can promote social education.

At an early stage school should find the special talents in art and show them to institutes where special education is available. Early training is in some cases of crucial importance. This is true e.g. of the technical skill of a performing musician.

To sum up, the main goals of aesthetic education are the following:

1. to provide all children with opportunities for creative self-expression and a harmonious development;
2. to cultivate aesthetic experience through contacts with various fields of art and to promote an open mind towards art;
3. to teach skills and techniques which allow children, at least some, to develop a permanent interest in one field or another;
4. do draw attention to questions of pleasure and harmony in man's environment, to develop aesthetic judgment and to take into consideration aesthetic values in decision-making;
5. to provide opportunities for co-operation, and in this way to contribute to the special education at school, and
6. to give an early training for special talents in various fields of creative expression.

DEVELOPMENT OF MANUAL WORK AND PRACTICAL SKILLS

Manual work and what we call "practical skills" have long and strong traditions in our country, at the primary school level in particular. A classification which separates between physical and mental activities at school has had harmful consequences as the former have been considered as less valuable than the latter. Development of practical skills have often been regarded as a kind of work practice; sometimes the importance of mechanical exercise has been overemphasized. This has lead to irrelevant learning and to adopting skills through imitation and uncritical attitude.

Endurance and conscientiousness may sometimes be of primary importance in learning, and developing them a justified process. The Committee takes, however, the view that there are higher social, cultural and individual goals to be taken into account: to develop a *capacity for independent and systematic work,* and to learn a critical attitude towards the activity itself as well as its results. This activity we call *"creative work"*. Physical and aesthetic education as well as manual work and practical subjects allow in particular for creative activity. Creative intellectual activity is only seldom a

source of satisfaction at an early age level. Working with concrete material is a basic form of creative activity and a source of immediate satisfaction.

Manual work is not only hand activity. It *involves and develops co-ordination of perception, thinking and motor activity,* and provides experiences which can develop and enrich the whole personality.

Suitable working methods and proper guidance help children develop a positive attitude towards work and practical tasks, and create a readiness for managing with everyday activities, i.e. monotonous routine tasks as well as new situations with problems to be solved. In manual work the value of *safety training* becomes clear and children learn to rely on their own capacities. As manual work promotes personality integration it cannot be meaningful to treat it, as it often happens, as something quite different from other subjects.

There is particular reason to emphasize that undertaking practical tasks, for example repair and construction, is a matter of attitude, and that school is responsible for developing the attitudes towards work. Children should also learn to manage when the tools are simple or defective. In this connection it can be pointed out that divergent, ingenious solutions are possible and of interest.

The present trends in our society and culture call for a reformulation of the objectives of the practical subjects. In an industrialized and specialized society it is important to know how to select, while earlier it was more important to know how to make implements and other commodities needed at home. *Original products and handicraft are,* of course, *still*

highly appreciated; in general, taking good care of home is considered valuable in many respects. Professional skills of technical and practical nature have likewise their uncontested place in present economic life. As the comprehensive school is above all a school for general education and not for professional training, it is reasonable to emphasize general goals, such as skills needed by a majority of citizens in everyday life. Making purposeful choices between various goods and services, and knowledge of how to repair and take care of ready-made goods are things not to be neglected. All this calls for long-term practice, knowledge and flexible attitudes as a number of new materials and goods flow into market. Taking into account economical aspects becomes also important. People should, i.a. be able to judge when it is remunerative to buy goods, completely or partly ready-made, and when it is better to make the things.

In making decisions like this children should learn to pay attention not only to *economical aspects* but also to *aesthetic* factors. It is worth while to emphasize the connection between aesthetic and manual education. Independent creative work contributes to mental health, however modest the result of one's own plan may be.

Children differ from each other with respect to the kind of work they are interested in, and also with respect to how independently they are able to work. These differences reflect sometimes differences in methods of instruction. E.g. the unwillingness of a group of children to make intellectual efforts can partly be due to limitations in knowledge and concepts, or to children's need to experiment with concrete material before advancing to a more abstract level. This fact has sometimes been forgotten.

In addition to goals shared by all pupils, school must also take into account the requirements of special talents, including the practical ones. Due attention to them will facilitate vocational choice and use of leisure time.

According to the Comprehensive School Act subjects promoting *vocational choice* must be taught. This refers probably to the practical subjects. To obtain empirical knowledge of them, the child should have an opportunity to participate in different kinds of work. Subjects with different programs for boys and girls should be revised, and a division of *sex roles should be abolished to the extent possible.* This is recommended by the Curriculum Committee.

As the school reform aims at taking into account individual differences, the number of alternatives should exceed those offered at present by the primary, the civic and the intermediate levels of the secondary school. Here it is worth while to refer to the experiences acquired from curricula for the complementary classes of the primary school and the civic school. A curriculum with an emphasis on theoretical subjects turned out to be difficult to realize, and it brought about negative attitudes. A shift in emphasis took place, and the attitudes changed too. *It is obvious that for a majority of comprehensive school children the practical exercises are the main channels for satisfying the need for action.*

INTEGRATION OF PERSONALITY AND PROMOTING OF MENTAL HEALTH

We can distinguish several subgoals:

- development of emotional life
- promotion of personality integration and mental health
- development of interests

School must also pay attention to deviant behavior which may be a symptom of later mental imbalance or failure in adjustment. Abnormal development should be treated either at school or by specialists.

DEVELOPMENT OF EMOTIONAL LIFE

As far as this area is concerned school has following tasks:

- to provide rich stimuli for emotional development and promote sensitivity, especially during the first school years,
- to create positive feelings and to avoid evoking negative ones,
- to promote controlling of negative feelings,

– to relieve general tension and balance emotional instability, particularly in adolescence.

Various situations bring about a number of emotional states: affection and displeasure, anguish and joy, fear, anger etc. Similar situations when repeated lead to consistent emotional attitudes. *Situations creating affection and joy reinforce happiness and friendliness.* It is harmy to be feared that school could bring about too much joy. Numerous experiences involving fear or anguish reinforce, in turn, fearfulness and discouragement. Situations creating displeasure and anger strengthen hostile attitudes towards the environment. Especially in the lower and the intermediate grades the teacher should be able to create an environment which gives the children opportunities for experiencing friendliness and joy, and which reduce shyness, discouragement and hostility.

School brings about *anxieties.* School establishes norms for achievement, rewards those who attain them and punishes those who do not (low marks, repeating of school work etc.). The most common school anxieties can be attributed to the following factors:

– failure in tests
– being late for school
– teacher's request to answer questions
– other children's mockery and laughing
– reciting, performing etc. in front of the class
– parent's mockery and rebuke of school achievement.

It is a duty of the teacher to take measures to prevent these factors to bring about feelings of shame or unnecessary fear.

Various forms of aggressive behavior will probably develop independent of the school environment. *School should make children learn how to control aggression.* Gradually the child learns to master states of anger, but he should also learn, preferably at preschool age, that anger does not justify violent demeanor. Children should also learn to avoid coarse language when they are angry. The teacher will become a model for children if he is able to control his aggression when he is angry, and if he behaves objectively.

Affection and emotional identification with the teacher is strong in young children. When they grow they should also become more independent and make themselves free of emotional dependency.

Adolescents often show opposition towards adults. It is less of a burden to the teacher if he understands that he represents the "adults in general" and that *all negative reactions are not directed towards him personally*. School should not expect much of the adolescent human relations. Rude and offensive attitudes towards other people must not, however, be allowed for adolescents either; requirements of good manners ought to be on a moderate level.

The mental health of the adolescents should not be neglected in learning situations. E.g. well planned and realized programs in physical education give opportunities for promoting adolescent mental health.

Play and games yield opportunities for promoting mental health:

1. Play gives stimuli for *creative imagination* and activates areas of personality which are easily neglected in ordinary teacher-centered learning situations.

2. Play yields opportunities for satisfying *needs of security, group affiliation and acceptance, and success.*
3. Play is a form of human interaction, adjusting of personal aspirations to those of the group, and practicing of role behaviour.
4. Play is an indispensable *source of relaxation and recreation.* It gives a counterbalance to the efforts and concentration required at work.
5. Play is *an outlet of aggressions and tensions.* It helps the child in maintaining emotional balance after failure and frustrations.

PROMOTION OF MENTAL HEALTH AND PERSONALITY INTEGRATION

Developmental trends in self-image formation show what effects school can have on mental health.

Self-image develops through various experiences an individual has about himself. This image affects the expectations and goals of the individual. *Self-image is moulded as a result of personal experiences and social comparison.* At first physical properties become the target of comparison, and later, from school age and on, achievements in various areas, special abilities in particular and qualities related to social relations. "Key persons" (persons who are of particular importance to the child) have a strong influence on the child's self-image as they through verbal means "mark" him with positive or negative labels.

Children are quick to notice that some playmates are strong and agile, and some popular and favoured in games. They also learn that some forms of behavior bring them praise and approval, some others rebuke. When a child starts going to school he has an image of his physical performance level, what he is compared to others, and whether he is accepted by peers or not. School shapes the self-image through established achievement norms and by making the child an object of public evaluation. The child compares his performance with his class-mates'. This comparison can bring about disappointment and frustration, but in favourable circumstances it helps the child to develop a realistic idea of his achievement level and to obtain a healthy reliance on himself.

The teacher's judgements have no doubt a deep influence on the child's self-image. Similarly, the teacher affects the reactions children have to the achievements of his co-fellows. In some classes children learn e.g. to laugh at wrong answers – the teacher has given permission to this through unconscious imperceptible cues. In some other classes discreet conduct is learned instead. A teacher should evaluate a concrete form of behavior and not the child's personality as a whole. Teacher can tell the child that he does not know how to multiplicate or that he has forgotten to do his homework; at the same time teacher and child can try to find out a solution, how to multiplicate and what to do in order not to forget the homework. This kind of constructive situation becomes impossible if the child is just told that he is "stupid" or "lazy". Achievement evaluation should focus on comparing the successive achievements of an individual and on finding out "gaps" in learning, and not on differences in achievement between the child and his classmates.

Similarly, in school reports *evaluation of qualities generally considered as constant, like personality traits, should be avoided.* Unwarranted evaluations can make the parents draw unfounded conclusions e.g. about the child's future. Teachers should report to parents observations of the child's behaviour and of such achievement that can be described reliably, and on behavior which is not beyond educational influence.

School achievement is not the only factor modelling the self-concept. Social relations, approval or rejection by the classmates, are important too. The teacher's attitude towards the child – especially during the first school years – has a great effect on the position the child will have among his class mates. Some studies show that the number of "rejected" children in a class depends on the teacher: in some classes one third of the children belong to this group, in some others no rejection takes place. A great number of school situations can be planned and controlled by the teacher. *If the teacher is sensitive enough, school can reinforce the child's reliance on himself in learning as well as social interaction.*

Entering into higher grades includes choices between courses of varying extent as well as choices between several supplementary courses. At this stage a child has to consider his capacities and possibilities more seriously than before. At a later stage he has to make choices related to profession and further education. These questions are closely connected with one's self-image. In a favourable environment a growing individual will be able to accept personality traits which cannot change and will be motivated for struggling forward relving on those capacities he has noticed he has.

When the children learn to separate in their thoughts the existing from the possible, self-image becomes more differentiated. The child understands that *there is a difference between what adults* (parents, teachers) *think of him, and what they expect of him.* If the child is attached to adults and trusts them, he begins to have the same kind of expectations of himself, in other words, he begins to shape his own ideal self. Development of the ideal self is influenced by various behaviour patterns and models, chosen among close, later among more distant personalities. At first the ideals are undifferentiated. Later the young people model their ideal self on the basis of qualities from several sources. The ideal self can remain dim and vague. If so, it does not shape behaviour as decisively as a clear image of an ideal self does.

The teacher often becomes a model for the pupil's image of his ideal self. Many teachers experience this as a heavy burden. It is accepted more widely to-day that *the teacher should not strain himself to represent an infallible ideal.* It is more desirable that the teacher is natural and true to himself. The teacher should be able to regard his mistakes and defects as something natural. Teachers who show genuine individuality and try their best, despite their limitations, are perhaps the best in helping the child to create a realistic and positive image of man.

Promoting social development becomes sometimes difficult as a teacher often represents a bygone society, and his task is to show a way to a future society. Becoming aware of the currents of his time and participating in social life will help the teacher in his task.

Not all the differences between the behaviour models

provided by home and school are harmful for the development of the ideal self. A total conformity could make the youngster intolerant and narrow in his opinions and interests. It depends on the age of the child and on the requirements and expectations of the adults how great a danger the incompatibility of ideals can be. Feelings of security should not become threatened. This is a matter of mental health, and it requires special attention when the children are young.

If the "official" school environment has made the child shape a negative self-image, i.e. he feels that he lacks traits "rewarded" in this community, he often looks for compensation in a peer group. He finds a group which rewards opposition towards adults and breaking of social rules. In puberty young people often look for behavior models and ideals outside home and protect their individual right of choice by resisting the parental attempts to guide them. *If the attitude towards home is strongly negative, co-operation between school and home is not always fruitful:* if the youngster feels that the teachers are allied with the parents, school fails in giving positive stimuli for a favourable development of an ideal self.

The identity of an adolescent implies consciousness of personal identity and of alternatives for action at present and in the future. A youngster with a loose identity "drifts" from one situation to another: he does not shape his life, but situations and friends shape him. Social identity implies growing consciousness of oneself as a member of a social group and feelings of solidarity with the members of this group. At first the sense of solidarity is restricted to a small

group, but gradually it grows to cover larger units (e.g. family and relatives, school class, native country, humanity). As an adolescent learns more he becomes conscious of the value system in his society and of his own attitudes towards these values.

A clear system of values promotes personal integration. Unflexible conformity to norms should, however, be avoided. If the hierarchy of cultural values an individual would like to establish is unclear to him it becomes difficult for him to solve ethical problems. *Religious and ethical education should promote settling of individual values* and integration of these with a more general system of values. An individual should learn to test his values and norms by questioning their consequences, how they would affect the integrity of the society, its preservation and evolution.

DEVELOPMENT OF INTERESTS

The role of interests

Interests are of importance to the personality development. Interests open up possibilities for a rich inner life, and they yield occasions for participating in various community activities and human intercourse. Arousal of interests is one of the goals of the comprehensive school also for following reasons: children do not get education only for professional life, but also for a society of co-operation and leisure activities.

Active interests stimulate school activities. School clubs can serve as links between school and home. Club members can also help to organize the programs of various school festivities.

What kind of interest should be favoured?

Interest studies show that there are general age trends; the results can, however, be generalized with due reserve. We cannot forget about the environmental influences, possibilities and values which affect the variety of interests within an age group. School cannot favour all kinds of interests as it has to take into consideration educational objectives. A wide interpretation of the goals of the comparative school guarantees that these restrictions do not become a restraint. School should especially promote interests closely linked with school subjects (science clubs, literary clubs etc.) and which are connected with both local and school activities (choirs, orchestras, sports clubs etc.)

Interests at various levels of the comprehensive school

At the lower grades promotion of interests consists primarily of stimulating and maintaining of a general learning motivation. At this age children's interests (collecting things, manual work etc.) can be quite intensive, but short-lived; it is

most important just to maintain a cheerful enthusiasm to school life. This makes it possible for children to try various activities in the direction favoured by the school.

In the intermediate grades the guidance of interests consists mainly of developing various skills. In many fields (e.g. in physical exercises and sports) a moderate level of skill is a necessary prerequisite for the arousal of interest. Some activities are "intrinsicly rewarding" to such an extent that social reinforcement is of little importance. As to many activities it is true that the real interest is not aroused, or will extinguish quickly, if the individual cannot reach a performance level which is rewarded by social appreciation. Pupils who never experience reward at school soon lose interest in schoolwork completely. A child cannot show equal interest in all school subjects. School subjects and extracurricular activities should provide rich stimuli for developing various abilities and aptitudes, and guarantee that all children find an interest in one field or another.

If students at a higher level are interested in a particular field, this can promote school work in several ways: e.g. special courses can be associated with interests. If a student reaches a high performance level he can, in addition, become engaged in various forms of activity according to what appears appealing: clubs, team work, planning of exhibitions etc.

Individual differences in interests should be taken into account in the same way as differences in abilities and achievement. In planning classroom activities individual interests should not be forgotten. Teacher promotes interest in school work if he makes students experience progress and if they get reward for the work they have accomplished.

Teacher should also help the students to find their special fields. Students can be directed to more and more intensive studies in their particular field, and in this way to concentrated long-term studies. If a pupil shows an excessive interest in something which might threaten an integrated development of personality, special guidance will become necessary.

PROPOSAL FOR AN INTEGRATED CURRICULUM

THE MAIN DOMAINS

The comprehensive school aims at providing the children with material and stimuli that favour a positive personality development. This objective has been taken as a starting point in defining the main domains of the curriculum:

1. Educational aspects of human biology
2. Cognitive education
3. Ethical and social education
4. Religious education
5. Aesthetic education
6. Development of practical skills
7. Supporting personality integration and maintaining mental health.

There are alternative ways for attaining the objectives of the comprehensive school and for balancing differentiation and integration in human development, After considering several possibilities the Committee agreed on the following units as a basis of structuring the educational material *in an immediate future.*

CURRICULUM FOR GRADES I-II

The educational processes rely mainly on integrated teaching, and a gradual differentiation of subjects will take place.

INTEGRATED TEACHING

In the beginning the children should be allowed to move around and act together spontaneously. They ought to become acquainted with their environment and learn to transmit this knowledge to each other and communicate their experiences in a variegated way. Integrated teaching can be expected to cover in principle all the domains of education mentioned above. The Committee came, however, to the conclusion that in practice this cannot be done.

Classroom activity should have its origin in the children's ideas, and the teacher should be able to give support when needed. This creative activity should lead the children to grasp meaningful entities.

Nevertheless, the teacher must possess a differentiated view of the developmental aspects he is trying to influence with his teaching. Teacher training should provide the teachers with detailed information about the developmental processes which are the aims of the comprehensive school, and about the stimuli that favour this development. A look at the curriculum should give a hint of how much time ought to be devoted to each domain. In attempting to reach the prescribed goals the teacher has to decide how to combine various subjects into meaningful teaching units. To a certain extent the teacher will be free to judge when to let special subjects become separate units. In this respect there may be considerable individual variation. Some teachers may feel happy to continue with integrated teaching which allows a fairly free combination of various activities and situational factors. Some other teachers may prefer to stick to a detailed plan about what should take place in the various domains, and they might like a curriculum with clearly specified subjects. The educational process should not forget about the individual differences in development. Some children may turn out to be relatively undifferentiated in their activities when they start going to school, whereas some others may have acquired plenty of knowledge and skills.

We must not forget that linguistic minorities are entitled to elementary teaching in their mother tongue if they do not have an adequate command of the language used at school. The language of the comprehensive school is either Finnish or Swedish. These linguistic groups will have separate schools even when they form a minority. For the *Lapps* there are, however, no separate schools. The Committee is of the

opinion that Lapp children should have elementary education in their native language. To ensure this there ought to be a teacher training college which reserves places for a sufficient number of teacher candidates that master Lappish. Lappish speaking teachers should get enough of economic support and encouragement so that they would stay in Lapland and teach. Lappish should also be one of the optional subjects in the upper grades of the comprehensive school. Also in special schools where education is given mainly in a foreign language elementary teaching should take place in the child's mother tongue.

COGNITIVE EDUCATION

The objectives are divided here into the formal and the material. The formal domain covers mainly the native language and mathematics. To reach the material aims, school must provide instruction about man and his world. At first linguistic development and acquiring knowledge about one's environment will be tied together. Acting together makes children learn about phenomena that attract them in their environment. Co-operation allows for discussing about what has been observed and done, and this is how children learn to understand what others say. Acquiring knowledge about the environment promotes learning of one's mother tongue. Along with this children develop a readiness for learning how to read. It is important that this readiness is at first developed through oral communication. School should encourage

children to give a verbal form to what they observe, experience and think, and they should learn to understand how other people verbalize what they have observed, experienced or thought.

During the first two years at school children should perceive the richness of the environmental phenomena. The experiences should be new for the majority of children. Otherwise there is a threat that they lose interest in school. The learner's receptiveness must not be underestimated. The curriculum should comprise representative *examples* of the sectors of knowledge into which the orientation subjects will be divided at a later stage (social, biological and science studies). Some chemical processes explained in a simple way serve well this purpose. If learning about the basic biological and physical processes is postponed, and if this learning takes place only through systematic instruction, there is a danger of misconceptions to develop, and these may later on hamper the assimilation of scientific concepts. If primary teaching is focussed on a narrow sector of phenomena, and others are left untouched, the child's world view might become biased. The study objects must be attractive and concrete. They should cover not only descriptive and classified information, but phenomena to be observed and problems to be solved. Biological and physical processes yield well for personal observation as well as for study under the guidance of the teacher.

Integrated teaching can start from situations where children experience a need to communicate using second order symbols and when they want to obtain information from printed sources. This is a natural way towards learning

to read and write. Then reading and writing should be separated from knowledge acquisition in general. An extreme form of integrated teaching does not separate at all between reading, writing and acquisition of knowledge: children learn about new things, and then read and write about them. In this case too little time may be left for practicing these skills. Systematic learning is more likely to take place if reading and writing are practiced according to a separate schedule and if they are not tied too closely with acquisition of knowledge about one's environment. Programmed material can be used if it is possible to avoid a drop in learning motivation which might take place if children are left on their own to study. Programmed instruction should be applied in a meaningful way, e.g. between different types of study periods. Attractive excercises facilitate learning to read and write according to one's abilities. To separate reading and writing instruction, at least partially, from general knowledge acquisition can be motivated by referring to reading difficulties that may develop if reading is too closely attached to accumulation of vocabulary. It is more advantageous to let children practice these skills by using familiar words. Native language instruction and various contacts with the environment will be the channels for learning new words. When a certain level has been achieved, reading will help accumulation of knowledge and enriching one's vocabulary. The teacher should have detailed knowledge about the learning process and he should be able to judge how to integrate reading and writing with other activities. *Environmental studies can be* – as they have been up to now – *the framework of integrated teaching.*

Using of a textbook for environmental studies is not to

be recommended. In Grade III the children will be able to assimilate oral information even about fairly complicated phenomena. Children know how to discuss in groups, but they can learn only about relatively simple things through reading. A textbook used at an early stage only limits the possibilities to become familiar with one's environment, and does not yield an opportunity of analysing problems at hand. Slow readers may drop their interest in learning about the environment if this is done through reading and not through personal experience. To promote learning about new things through reading, textbooks should comprise not only literature but also suitable factual information. Children should also learn how to look up things in encyclopedias and other books of reference. Drawing and handicraft are also means for becoming acquainted with one's environment. Children can learn about a number of things more easily if they draw a picture of the object, if they make miniature models etc. Drawing and handicraft in this sense are different from creative self-expression, a topic to be discussed later in connection with aesthetic education.

Excercising of practical skills should be included in the environmental studies. It is important for a school beginner to learn *how to move around and manage in traffic*, at school, at home, on excursions etc. Teaching should be linked with information about the environment. Teacher should explain to the child why it is good to behave in a certain way. A continuous and regular practice of "safety skills" is a necessary prerequisite for developing habits that ensure the safety of an individual. Information about factors that influence health should be connected with creating *basic*

habits of good hygiene. Simple tasks related to home and one's environment should be discussed, and the teacher should explain why certain forms of behaviour are meaningful in special situations.

Integrated teaching also creates a basis for the assimilation of mathematical concepts that will be presented later. Children should learn to understand and to use words that express quantities, order, quantitative relationships (more, less, as many, as much, the first, the last, the middle one, the last but one, all, all but one, big, bigger, the biggest, etc.). When the children have *enough experience of quantities, order, quantitative relationships and of words that stand for them,* mathematics will become a separate area of teaching. Abstract mathematical concepts will be easier to learn if they are not associated too closely with concrete matters.

RELIGIOUS EDUCATION

Ethical education should be integrated with the problems of a developing individual. Religious education should not be mere learning of some facts. It should allow for aesthetic experience and offer stimuli for a rich emotional life and for developing one's total personality. Integration of religious and cognitive education can be promoted by drawing attention to the difficulties that might arise if mutually incompatible ways of thinking are developed within the sphere of different subjects.

AESTHETIC EDUCATION

Integrated teaching yields opportunities for various forms of *self-expression.* Learning about the environment may be a deep experience that can be expressed in words, music, rhytm, colour and form. Aesthetic experience is often linked with social interaction and with the transmission and reception of expressive messages. In this way it brings people together. Integrated teaching offers possibilities for aesthetic experience in group, such as singing in a choir, playing music together, physical excercise in a group, and dramatization. These activities provide stimuli for both aesthetic and social development.

Not all aspects of environmental studies offer suitable basis for self-expression. An extreme form of integrated teaching is to connect self-expression with knowledge acquisition; first, a new thing is introduced, then the same thing is sung about, drawn, and acted out in play. Such integrated activities should be restricted to those subjects which offer a basis of experience for self-expression – but, here, too, one should avoid forcing self-expression repeatedly into the same pattern of activity. It is recommended that the teaching of music and physical education should be linked together closely during the first school years. Music not connected with physical education should of course be studied and, conversely, there should be physical education without music. In addition to music-making, opportunities for listening to music must be offered in different forms from the very beginning. Pupils may well be able to enjoy music which is considerably above the level they are able to attain in their

own singing and playing. Besides active music-making, the importance of musical appreciation as such must be emphasized, as this may create a permanent interest in music. At the beginning the words and melodies are one: delightful words increase the feeling of affection for the song. The children should not learn to think that music generally expresses concrete matters. That is why instrumental music should be part of the programme from the beginning. A powerful visual experience may offer stimuli for a musical as well as physical or pictorial expression. Self-expression in a visual form is not confined to drawing, but embraces moulding of several types of material. The subject we call "art" should not be divided into different subjects according to the material used, nor depending on whether the aim is self-expression or the production of objects. All art teaching should focus on the creative process and not on the product of the activity. *Art comprises here drawing, creative handicraft, and handiwork;* in drawing, the emphasis will be on creative self-expression. Children can act together when they draw, but training manual dexterity and using of tools requires individual guidance; then working in subgroups becomes necessary. Beautiful lettering can also be associated with other artistic activities. For children art is an entity, but the teacher must be able to separate between the skills and promote the development of each of them.

EDUCATIONAL ASPECTS OF HUMAN BIOLOGY

All school planning must take into account human biology. The curriculum must include a sufficient amount of physical excercise that promotes balanced personality development. In addition to short breaks, a sufficiently effective period of physical excercise will be needed every day for maintaining a good physical condition. Part of the breaks could be used for this purpose. If the school yard is well planned and well equipped, this will increase the spontaneous interest in physical education. Training skills that favour social participation and free time activities should be included in the program. Part of physical education should be expressive and linked with music.

ETHICAL AND SOCIAL EDUCATION

The most essential skills of human co-existence can be learned in social situations at school. Social learning can then be extended to wider contexts, and it can be integrated with questions that arise in connection with religious education and environmental studies.

It is expedient to reserve an hour a week for individual guidance and counceling. This would allow the teacher to be free to discuss educational problems without being tied to a fixed plan. During the discussion hour the class should agree on working forms, rules of social intercourse, and consider responsibility for matters of general interest and attitudes

towards common property. The consequences of breaking the rules should also be discussed. Punishment that could be experienced as revenge should be avoided; an effort should be made instead to find measures that allow for a better adaptation to school work. Educational guidance should not be teacher-centered instruction. The children should feel free to discuss the problems they have. Role-playing is also an effective way to deal with the daily problems of social intercourse. The meaning of social norms and ethical principles becomes clear when they are broken. That is why it is important for ethical and social development to consider the consequences and measures relevant in these circumstances.

Integrated teaching in Grades I and II will cover the following subjects:

Mother tongue
Environmental studies
Religious education
Mathematics
Music
Physical education
Art

The cognitive fields tend to become overemphasized in the Finnish school. *What we strive at is a balanced personality development, but when a curriculum is made, a disproportionate part is generally devoted to the cognitive area.* In Grades I and II one third of the school time should be reserved for art subjects and physical education. At least half a lesson a day should be devoted to physical excercise. Two thirds of the teaching time should be for the remaining

subjects, and half of this should be devoted to native language excercises. What is left could be divided equally between mathematics and environmental studies.

CURRICULUM FOR GRADES III-IV

COGNITIVE EDUCATION

The language instruction in Grade III will cover the mother tongue and a foreign language. Though these are taught as separate subjects, their similarities should be discussed and various linguistic aspects should be related to other contexts.

Mother tongue instruction comprises three areas: *language as a means of communicating facts, as a tool of expression and as a structural system.* It is worth while to emphasize that these areas have close ties with each other. In the comprehensive school teaching of one of these areas should not become a separate objective, unrelated to other aspects of language learning. Each area should be linked to other subjects, for some parts at least. At this stage the children master the linguistic skills, especially reading and writing, well enough to use them for acquiring knowledge about new things. The child's vocabulary develops also through studying orientation subjects which allow creating a natural way of verbal communication and transmitting information about

various facts. Working together in groups creates a natural need to communicate information and opinions. If language learning is distinguished as a separate subject, communication tends to become less natural. In the curriculum for Grades V and VI one language lesson a week should be linked with an orientation subject to form a block (mother tongue and bio-social studies). Acquiring of facts and communicating information can then be experienced as an entity. The textbook vocabularies should meet the demands of each level of development. In the upper grades teaching of the structure of the child's mother tongue acts as a bridge between native and foreign language studies. Learning about language structure should cover similarities and differences between one's mother tongue and the foreign language. Language teaching should create a general readiness for language learning and to promote positive transfer to later studies of foreign languages. Verbal self-expression is closely linked with other forms of self-expression like singing and music, plays and physical expression, and it could be trained together with these and not only in connection with structural studies of language.

A link between native language and biological sciences can be created by observing animal communication and by discussing the ability of animals to transmit and decode messages. Links with social sciences can be created by scrutinizing the function of language in creating, preserving and transmitting human civilization from one generation to another.

Although *mathematics* is a formal system different from natural languages in several respects, mathematics as a school

subject should not become a completely separate entity. An emphasis on logic yields a good basis for concept formation and development of logical operations, and allows for various applications. Arithmetical excercises should reflect as well as possible those fields of life where mathematics is used as a tool. The excercises should not be limited to the economic field. Geometry teaching should promote the capacity of drawing conclusions. This type of knowledge has a greater transfer value if the skill is practiced in various contexts.

Environmental studies, which in Grades I and II focus on knowledge and skills necessary for proper orientation in one's environment, will now be differentiated into knowledge about man and information about one's environment; this is how the orientation subjects develop. With increasing age the child will enlarge his intellectual sphere in a more systematic way. It will be advisable to focus on the basic concepts of the various fields of knowledge, and on common rules and structural elements. This means acquiring of knowledge which cannot be applied directly, but which must be assimilated in order to build up a larger body of knowledge. Although practical skills and knowledge about the environment will be divided into separate subjects, links should be maintained between knowledge and its applications.

Knowledge about man and his environment (orientation material) can be divided in two on the basis of the concepts used. These main divisions are: *bio-social studies,* i.e. examination of the communities of living organisms, and *natural science studies.*

Study of the communities of living organisms is subdivided into two sectors. Within the first sub-sector, *the*

children recognize how the survival of all living organisms depends on environmental conditions and on their physical and/or mental adaptation to their environment. The second area consists of the study of man-made environment, i.e. the study of the basic features of *human civilization*. The basic elements of human civilization, for instance, the use of tools, language, social organization, child-rearing, the explanation of the world, are studied in Grades III and IV, illustrating the phenomena with some examples. Technically less developed cultures should be studied, because it is easier to observe within their framework the basic features of civilization and their interaction. When the basic elements of civilization have been understood, the concepts thus accumulated can be used in analysing various cultures in Grades V and VI. Thus there is a dual approach to the subject: contemporary cultures of various people in different parts of the world will be studied (the geographical approach), as well as the past culture of one's own country (the historical approach). In addition to this, an attempt is to be made to create an insight into the history of various peoples within the framework of the geographical approach. This integrated approach starts with the history of one's own country. Teaching proceeds by large steps, in giving some glimpses of past events. When the children have a general idea of historical change, teaching can focus on shorter intervals and end with an attempt to depict the essential features of society and culture during the most important eras. Reasons for change should also be looked for. Historical events can be understood if it is pointed out what the consequences of change will be for an individual and for the society. The role of children and youth in a family and

the society (everyday life, education, occupational training) should be discussed in such a way which makes the children grasp the continuity between past and present. A notion of the structure of the society and its various institutions can be achieved if the teacher can clarify how these have influenced human life in various times. The interrelations between the various sectors of the society, the connection between the production system and social organization are questions which could be touched upon.

Children ought to learn about people in various parts of the world, and about their culture. A clear cognitive map of the world is, however, a prerequisite for this. Learning could start from looking at the various continents, and then it could proceed to individual countries discussing some examples. Following a spiral curriculum means that the continents, people and culture will be taken up later for a more detailed discussion. This ought to pave the way for understanding societies and cultures which can be dealt with only in the passing. The children ought to get a general idea of the world and the basic elements in community and culture. Learning about most important place names should not be neglected either; selecting these could rely on frequency counts from the mass media. In the middle grades children learn place names quickly and attach mechanically some facts to them. What the teacher should do is to relate this knowledge with background information about life and culture in various societies. Natural geography should not be separated from cultural geography. Links between nature and culture should be looked for. Studies of culture and social organization should also comprise religion which should be approached in a

positive and unbiased way. In the middle grades it would be suitable to show how religion is reflected in the life and action of a society and an individual human being.

Natural science is the second main domain among the orientation subjects. It will comprise general information about physics, chemistry and astronomy. Illustrative examples of specific phenomena will be studied. The aim is to make children familiar with the essential characteristics of these phenomena and to show where to look for them. This learning should be integrated, to the extent it is possible, with biological and social studies. The relation between chemical and the basic biological processes in living organisms should be understood. Studies of physical phenomena could be integrated with studies of the structure and movement of animated beings and to the production of tools by man.

Applications of science should also be included in the studies in Grades V and VI. Children should recognize the role of basic biological processes in forestry, agriculture, ecology, and in the preservation of nature. They should also see how human biology is related to nutrition, habits, individual and social hygiene, sexual behavior, child care and environmental planning. The most important applications of physics and chemistry should be studied. In the middle grades the emphasis could be on how knowledge is applied by an individual, by a family and a community. In the upper grades the applications should be connected with the problems of a society and the whole mankind.

RELIGIOUS EDUCATION

What has been said earlier about integrating religious education with problems of personality development, aesthetic experience and cognitive education, is relevant here too. The cognitive aspects of religious education should be related to a general context and discussed in connection with culture and society. This learning should be integrated with general social studies.

AESTHETIC EDUCATION

Aesthetic education covers besides literature and poetry, also music and visual art. Music and physical expression can be combined into various forms of self-expression when desired. Music teaching is divided into performance and learning about music. The emphasis will be on the former. Visual art education should cover the whole human environment. It should not be limited to producing and appreciating some specific works; tools and common objects should also be dealt with as well as moulding of various materials. The emphasis may be either on the result or on the process itself. Children should recognize that the products of a creative process can be evaluated from several points of view: beauty, usefulness, economy.

Integrated self-expression should be part of school program. Different kinds of expressive symbols can be united to form an entity, as in a play, music drama, ballet, and

aesthetic gymnastics. Integrated self-expression can start from something the children have experienced. They can then try to find means of expressing it by using various symbols. It would be appropriate to reserve some period of the year/semester for courses of self-expression. Teaching of this would presuppose co-operation among several teachers. To ensure that the comprehensive school will have teachers for these courses, various kinds of optional courses in integrated self-expression should be included in the training of classroom teachers and teachers of music, art, and physical education. Thus, the aesthetic education curriculum should include training both in individual skills and in forms of integrated self-expression. Disagreement as to their importance in the curriculum, arising out of differences of value judgement, might easily occur. Integration of artistic education should be aimed at together with the training of individual skills, and not instead of them. It should be made clear to the pupils that the attainment of the skills of integrated self-expression demands widely differentiated practice. High level skills of self-expression are possible to attain only through extensive practice.

EDUCATIONAL ASPECTS OF HUMAN BIOLOGY

A school-day has to include a period, specially devoted to maintaining a good physical condition; a longer period will be needed once a week for reasons of health and for practicing skills which require long training. One period each semester

should be devoted to special skills. Physical self-expression, with music or without, should also be included in the curriculum.

DEVELOPMENT OF PRACTICAL SKILLS

The most important skills are those needed in daily life. Skills and habits ensuring safety and health deserve a core position in the curriculum. In primary education the emphasis is on personal safety; later teaching expands to cover skills and habits necessary for maintaining the safety and health of a group that child is member of. Children have to learn how to take care of their clothes and how to participate in domestic work. Domestic skills, e.g. simple cleaning and repair of clothes, cleaning a room, washing, using tools, repairing simple things, should be taught both girls and boys. Practicing of these skills should be preceded by an explanation why it is meaningful to do in a certain way. Children should learn to run everyday matters, to move around in town, to be a customer and a client etc. (travelling, shopping, going to the post office and to a bank, how to manage in case of accidents). Civics should not be made to a theoretical subject; it should include plenty of practice. The curriculum should aim at meaningful units and allow for learning different skills in proper contexts. Skills needed in handicraft will be developed in art education. In creating study units, practical skills can be grouped together.

ETHICAL EDUCATION

The children ought to recognize the significance of rules in human social relations. This can be achieved e.g. in connection with biological studies. Life and culture of a people directly dependent on nature will show the meaning of social norms in maintaining a community. Learning about social rules and norms typical of Finland in bygone days will probably lead to a better understanding of norms than studies on the complicated society we have now. How to make rules can be made tangible by letting children establish norms for a society of young people. In the middle grades the children ought to recognize how ethical principles are reflected in religion, law, education, customs etc.

A PROPOSED DIVISION OF SUBJECTS

Mother tongue
Foreign language
Mathematics
Bio-social studies
Science
Religious education
Music
Art
Physical education
Practical skills

Planning for a good schedule is far from easy. What we aim at here is balanced human development.

In *Grades III and IV* school time could be divided in the following way:

A proper balance between the cognitive sector and other subjects might be achieved by devoting at least one third of the classroom time to physical education, music, art and practical skills. Half a lesson a day is a minimum for physical education. Cognitive studies will require two-thirds of the classroom time; orientation subjects will take one third, and mother tongue, a foreign language and mathematics two-thirds of the cognitive sector. At this stage mother tongue will be somewhat less emphasized than at an earlier level.

Grades V and VI: If the school week will be extended from what it was in the previous grades, this additional time could be devoted to orientation subjects as both differentation (geographical and historical approach) and expansion (applications of knowledge) will take place. Bio-social studies need more time than science does at this stage; science will mainly consist of elementary learning of physical and chemical phenomena.

CURRICULUM FOR THE UPPER GRADES OF THE COMPREHENSIVE SCHOOL

INTRODUCTION

In Grades I–IV the subjects will be the same for all. At higher levels there will be elective subjects. The alternatives should be in harmony with the students' interests. What is chosen should not affect later opportunities for further studies.

Even in the highest grades the core subjects should be the same for all; mother tongue, foreign languages and mathematics are such subjects. They create a general readiness for further studies, and that is why they should be included in the curriculum of every student. Individual differences are catered for by lettings students choose between courses of different level in foreign languages, mathematics, physics and chemistry. These courses represent a transitional stage, and they will be substituted later with learning situations that allow for individual progress according to one's capacity and personal tempo. Supportive teaching is necessary for slow learners in the core subjects.

Furthermore, information and skills necessary for every

citizen should be included in general education. Learning should also be harmonized with one's special abilities and interests. This means that the obligatory subjects must include orientation subjects as well as practical skills. Learning should cover basic facts and skills, and the students should have the opportunity to choose between special courses according to their interests and skill. The obligatory subjects should promote a healthy personality development; the physical and aesthetic education have, however, a key position in this respect. The obligatory education in physical skills should guarantee the students a good physical condition. Special courses should also be available, and each student ought to be able to find a form of physical excercise that will attract him even later. Aesthetic education should make every student acquainted with art. The course promoting self-expression should be optional; to force pupils into self-expression would be meaningless.

PROBLEMS RELATED TO OPTIONAL SUBJECTS

The time to be devoted to optional subjects depends on how much freedom of choice is considered necessary for a good study motivation and how extensive the studies in the obligatory subjects will be. The total amount of school work must be maintained at a reasonable level. Optimal study motivation requires that at least one-fifth of the school day will be devoted to optional subjects. Experience obtained in Finland, and in other developed countries, shows that if we

want to keep pace with other countries in education, the number of lessons in obligatory subjects will be determined on the basis of their use in production, or on the basis of general esteem.

We agree that there should be freedom of choice in the cognitive area as well as in asthetic education and in practical skills. In practice there are, however, several limitations to this. In the transitory phase when the intensive study periods are not yet applied everywhere, and when there are still organizational difficulties, priority should be given to optional subjects, which give "education for leisure", i.e. aesthetic education, practical skills, and physical education. School should also give optional courses that are occupation-orientated. In planning optional subjects school should make use of the special interests of the teachers and those of the local people.

COGNITIVE EDUCATION

Possibilities for integration

Mother tongue, a foreign language and mathematics will be the main subjects in the upper forms of the comprehensive school. Here a new problem appears: should every student study two foreign languages.(1) In the present world, study of

(1) Here "foreign language" refers also to the second language of a bi-lingual country like Finland.

one foreign language can be considered part of general education. Although it is good for a society that there are citizens who master several languages, there is no need for everybody to know two foreign languages; such a situation would scarcely be advantageous.

Two compulsory foreign languages would mean a slower progress in the major foreign language compared to countries with one compulsory foreign language. It is also clear that two foreign languages leave less time for other subjects than does one. To achieve a good knowledge of one foreign language requires plenty of time. If the special circumstances of a bilingual country will require learning of two foreign languages and if we follow the present schedule, planned by the Ministry, the second foreign language should be included among the optional subjects, particularly if learning of two compulsory foreign languages yield negative results. In this case the student must have the right to choose between two courses of different levels.

The connections between one's mother tongue and the foreign language need to be treated systematically. A comparison of the language structures facilitates learning the languages. Some aspects of language could be learned in connection with orientation subjects. This would be easy if the instruction about one's mother tongue would be given by a teacher who also masters an orientation subject. For this purpose a team could also be established among the teachers. Literature could sometimes be studied in connection with social studies. The students could, e.g. analyze the different functions of literature in the society. Foreign languages could also be linked with orientation subjects, particularly the first

foreign language. In the upper grades the student should master the first foreign language well enough; he ought to be able to use it for learning about new things, e.g. geography This means, i.a., that English studies should not be limited to facts about England and America; the students should learn about all the English-speaking people in the world, and they should learn to understand the geographical, historical and political reasons for why English is so common language to-day. The student ought to be able to tell about his country in a foreign language and be able to communicate with a foreigner.

Mother tongue as an expressive means should be linked with other means of self-expression cultivated in the domain of optional subjects.

The connection between mathematics and 'natural languages' – the so-called *formal* subjects – will be understood if they are examined as means of thinking; teaching can focus on similarities between concept formation and logical operations.

In the upper forms the students ought to become acquainted with the most important areas of human knowledge. They should discover large entities and notice the connections between different fields of knowledge. Integrated knowledge about man and his environment can be obtained by analyzing the similarities and differences of various phenomena and by examining the methodological similarities and differences in acquiring information in different fields of knowledge. If those fields of knowledge which have similar objects of study and the same methods are treated as a unit we get three groups of subjects:

1) orientation in culture and society
2) orientation in biological nature
3) orientation in 'physical' nature.

Orientation in culture and society – "social studies"

The central aim is to form an idea of society and culture as a whole. The studies will be arranged accordingly in two sectors, depending on whether information is given about present-day peoples and their interaction, their culture, and society (the geographical approach), or about the cultures of the past (the historical approach). In both sectors concepts of cultural anthropology can be applied to cultural descriptions and sociological concepts to descriptions of social structure and social processes. In the advanced grades the studies should cover the mutual interaction between various forms of culture and social systems (for example, the economic and political system). Geographical, historical and sociological studies can be treated as separate units. Periods of intensive study are to be recommended. The learning material could be presented in parallel and consecutive courses which together would form a whole. An overemphasis on European and Western history should be avoided. A historical background could be added to courses on the geography of other continents. The framework of "historical events" which was created in Grades V and VI by studying Finnish history can now be made use of by connecting Finnish history with other world events. Community and culture should be discussed in a rational way; the

students ought to recognize the existence of social problems and think of alternative solutions to them in various social and economic systems. The students should be encouraged to look for alternatives, and through this behavior pave the way for international co-operation.

Orientation in biological nature – "biological studies"

Human biology and comparisons between man and other living creatures deserve a central position in education. Up to now school biology has concentrated on analysis of structures and on examining organs and tissues. A shift of emphasis appears necessary. Students should become familiar with present-day research in biology including cellular activity, biophysics and biochemistry, population and community research. Biological studies should also include psychology which would otherwise be excluded from the curriculum. Perceptual processes in animals and man, and the learning capacity of various species, could be discussed; relations existing between the structure of the nervous system and learning ability should be pointed out; perceptual and motor development and the role of learning in humans are also suitable topics. Biology has also links with social sciences. Division of tasks (role division) can promote the survival of higher animals. Biological studies should stimulate the students to think about the environmental prerequisites for a positive human development. The ethical aspects of regulating man's biological processes should also be discussed as the

technical possibilities for regulation continuously increase. Biology should not be understood as a collection of established facts. The students should become acquainted with research methods through laboratory experiments, and they should grow to understand the present and past achievements in biology.

Orientation in chemistry and physics – "science studies"

Science is divided here into physics and chemistry. The similarities and differences in their objects and research methods should be understood by the students. Participation in laboratory work will show the students how to acquire knowledge about physical and chemical processes. As experiments are not enough for assimilating systematic knowledge about these phenomena, the teacher can help students to integrate material from various sources, i.e. from books and journals, and laboratory demonstrations. Teaching should cover applications of various processes (e.g. chemical) to production. Problems of application should also be discussed in connection with biological processes in general: how do productions of man affect the equilibrium of the biological processes in nature. General education aims first of all at making human beings understand the character of physical and chemical processes and their significance to the human environment.

Additional courses in orientation subjects

Research methods are a good topic for additional courses in science and biology. The culture of a particular area, a special time period, or a subculture are suitable themes for additional courses in social science studies; the methodological problems in this field are too complicated to be dealt with in detail in the comprehensive school. It is, however, necessary to give the student some idea of how information about culture and society is obtained.

At an advanced stage the students ought to have a possibility to take a unifying course dealing with various fields of human knowledge and their interconnections. An introduction into the methods for collecting information should also be given at this stage. The similarities and differences between the experimental methods in physics, chemistry, biology and social studies, should be pointed out. A comparison between biological and social data should be made. This course could be planned to illustrate how knowledge has changed, and is changing, how research is applied in the society, and what kind of social and ethical problems are involved in applied science. An integrating course like this could be included in a period of intensive study; alternatively, orientation lessons during the last weeks in Grade IX could be combined together, and teachers of various subjects could co-operate in planning and presenting the material. The study periods in the orientation subjects in the three main areas could include courses dealing with broad perspectives and the connections between different subfields.

A majority of courses would, however, deal with special subfields of study.

RELIGIOUS EDUCATION

What has been said about the integration of religious and aesthetic education at the elementary level, applies to advanced grades too. Ethical education should be integrated with personal problems of an individual and with those of a society and all human beings. The same problems should also be discussed in biology and social sciences, from different angles though. Proposed ethical solutions to the basic human problems should not be limited to Christian views; other religious approaches should be discussed too. Religious education should cover different religious philosophies and make the students understand the connections between religion and culture. Increasing cultural interaction is a challenge to religious education; at least one fifth of the time should be devoted to religions other than our own. Learning about various religions should start in the elementary grades of the comprehensive school. A growing individual should get various and sufficient material for creating a "Welt-anschauung" of his own. Cognitive aspects will be linked with religious studies: the students should learn to understand the problems and research methods of theology and science of religion.

EDUCATIONAL ASPECTS OF HUMAN BIOLOGY – PHYSICAL EDUCATION

A daily break for physical excercise is necessary for maintaining a good physical condition. Learning of special skills should be included in the general programme as well as in optional courses. All students should have a certain amount of physical education, but only some lessons should be shared by all; part of the program should comprise courses which allow for a choice between various types of physical activity. In addition to optional courses for developing physical skills, courses of self-expression will be needed too. Modern dance, in which visual, musical and physical expressions are integrated, can be mentioned as an example.

AESTHETIC EDUCATION

Aesthetic education covers literature, poetry, music and visual art. One basic course is intended for all. The student can take it during one or two periods of intensive study. Optional courses will also be available. At the end of Grade IX all students should join a course devoted to the common aspects of all arts. Learning to understand art should be the core of the obligatory courses. Optional courses should concentrate on practicing of art, and they should allow for a deeper understanding of art. The obligatory courses will be closely connected with the orientation subjects, particularly with courses on culture and society. Learning about art can

be linked with studies on a particular culture, people or time period, if several teachers are willing to co-operate in making the program. In this way art teachers can contribute to the planning and implementation of various courses. Religious art can be part of the religion studies. Co-operation between teachers of religion and art should be promoted.

The students should have possibilities for choosing between art courses. Integrated self-expression should be included among the optional subjects. Some students may prefer integrated self-expression while others may predominantly be interested in developing advanced skills. Some want to enjoy art undisturbed by others, some prefer collective forms of art, e.g. drama and playing in an orchestra. School should pay attention to these differences and plan the curriculum accordingly.

The regulations about optional courses should be flexible enough to allow a student to get credit for artistic studies outside school. Several kinds of material for creative art should be available at school. At the upper grades art studies should comprise learning about various forms in man's environment. This learning could be related to social studies and to practical skills. Optional courses should allow for developing various handicraft skills.

EDUCATION IN ETHICS

Ethical problems can be discussed in connection with orientation subjects too. Preserving life on our planet could be

taken as a starting point in biology. Basic human needs and the promotion of equality among people could be a good topic in social studies; demands for co-operation among the members of a society could also be discussed. The final phase of social studies should include a course focussing on the basic concepts of ethics and the manifestation of various ethical principles in society, e.g. within the juridical system, the church, commercial and business life, politics, education, etc.

TEACHING PRACTICAL SKILLS

Skills needed in taking care of personal needs and one's environment should be developed. The practical courses should cover personal hygiene and health, hygiene at home and in one's environment, creating a pleasant environment, making healthy food and taking care of clothes. The courses should focus on applications and practicing of skills. The instruction should be obligatory; optional courses should be available too. Grade IX should include an obligatory course dealing with a whole range of housekeeping problems, general planning, co-ordination of various tasks, correct timing, and division of labour. The students ought to become able to see what commodities and services are worth while to make at home and what to purchase. A critical evaluation of the changing products on the market and of the advertizing methods, is necessary. It is also important to learn how to choose commodities; comparing of the properties of some commodities may promote this learning.

Obligatory instruction in child care and upbringing is part of the advanced level program. A supplementary course in this field should be arranged, too. Optional courses in practical skills should comprise information about textile work, using a sewing machine, and weaving. Optional courses in technology and related mechanical and electrical fields, in metalwork, carpentry and crafts will also be needed.

A PROPOSED LIST OF SUBJECTS

Mother tongue
Foreign language
(Second foreign language)
Mathematics
Social studies
Biological studies
Science
Religion
Music
Art
Practical skills
Physical education

Two-thirds of the classroom time will be devoted to cognitive education and one-third to art, practical skills, music and physical education.

Formal subjects (languages and mathematics) will cover two-thirds of the cognitive education, and the orientation

subjects will have the rest. Half a lesson a day will be the minimum of physical education. One-third of the time allotted to music, art and practical skills will be obligatory instruction, and two-thirds optional courses. The student should be free to use the time reserved for music, art and practical skills, in the way he likes and according to his interests. Around one-sixth or a quarter of the time allotted to orientation subjects could be used for optional subjects. A second foreign language could be optional, and there should be several languages to choose between. The number of mathematics and language lessons should be independent of the course level, if possible.